3B-O: Green Business Models

BIZ Breda-Oost, Minervum

7XSUC0 - Green Business Models - TU/e

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Content

1. Creativity Boosters

Within this section creative values and their relevance for this project are described, the values and their explanation are provided by a research of Lund et al. (2017).

No-experienced Judgment

A neutral and open mindset towards the company would be important. You want to know all the details of how the company works and thinks, you will only achieve that when they dare to say anything. When you bring in your own judgements it could impede a collaborative workflow with the company. Furthermore, within the team, it is essential to respects everyone's ideas. No concept is perfect when you combine the good parts of every idea the final result will be better. More ideas are almost always better, and with no experience judgement, it will be easier to share them. So, both during the interviews as while working together we should not judge immediately and ask for open opinion free questions as provided in the lectures.

Creative elaboration

The BIZ is new and innovative for its application, however, only security policies have been created yet. To further develop this idea we need to elaborate on the existing concept and external ideas. The concept is already there, but the next step towards sustainability needs to be taken. We should do this by investigating similar approaches used by different fields and combining these with the existing BIZ approach. This shall be done probably twice throughout the process. Firstly to create the first set of ideas for the new business model and then additional time for further deepening of the initially chosen idea. The creative elaboration helps here since it uses one central idea as a core to investigate other possibilities. By doing so all elements of the idea are investigated and improved, creating a deeper elaborated concept.

Persuasion

In order for the consumers to accept the BIZ as the "correct" course of action, proper persuasion will have to be applied. This means that the concepts that are put forward in the current BIZ will have to be described in a way that makes it the most appealing to the companies that inhabit the area. This is because of the fact that said companies will have to vote on the ideas presented in the BIZ and thus a majority of these votes must agree. Using this can also allow the companies to have more input on what they think is important and thus help the BIZ come to a more accurate conclusion. This also gives the organization responsible for the BIZ a more clear scope of the problems and, more importantly, solutions to these problems.

Horizontal thinking

For our case, horizontal can be helpful to explore what sustainability means for the BIZ, since sustainability, in general, is a widely-used term, with lots of different definitions attached to it. Only when this is clear, sustainability can be translated into goal setting for the BIZ plan and companies can see what they can contribute to it. Horizontal thinking will be used for creating awareness about what sustainability is, and what it means for individuals, companies, societies, etc. The fundamental principles behind it will be explored so that they can be applied to goals for the BIZ plan. It will be used for idea generation sessions for creating the BIZ plan/BM.

Visualizing future scenarios

Even though a BIZ will only be made for 5 years, thinking about the future is important. Subjects such as sustainability, smart cities and security 2.0 need to be implemented in the new BIZ but there can only be guessed what that will look like in the future. And that is exactly what we need to do. By visualizing what can happen, is likely to happen or what might not happen at all, we will be prepared to respond to changes. By having to deal with possible restrictions but also unlimited options, a lot of creative ideas can be made up. This method needs to be applied at the beginning of the process, especially during brainstorm sessions.

Fluency

Fluency is chosen because keeping the process going is very important, especially in this case. Since this is a broad case, solutions can be found in many different directions. Which means that if a possible solution is found, we still have to look further in other ways. By not sticking to one solution our creativity will improve, and it might be possible to connect different solutions to one final answer. By creating fluency, the team will be more motivated to keep the process going since it will not be stuck on one specific topic. This creativity booster will be implemented mainly in the integration phase of the project. But overall, fluency is important in every phase, to produce lots of ideas during a brainstorm session to keep going.

Relations

Since horizontal thinking involves idea generation, e.g. coming up with new ideas, it touches the principle behind no-experience judgements. Without an open setting where value-judgements about ideas are disregarded, horizontal thinking will never be effective. In this way, the no-experience judgements technique is conditional as complementary to the horizontal thinking technique.

Secondly, not judging someone can create more space for incoming thoughts/ideas. During group sessions, this space creation is important for idea and concept creation, so that ideas can be shared without getting attached to a value judgement. Many different thoughts result in a more diverse field of ideas which is strongly related to the creative elaboration of a project.

Lastly, the different skills benefit from each other timewise. In the exploratory phase, horizontal thinking gives broad research in different fields and how they might be applicable however after this initial phase it becomes less effective. Creative elaboration can then take off. In the initial phase, it is not that useful, but it can take the product brought by horizontal thinking to the next deeper concept.

2. Company background information

3B-O is the abbreviation of 'BIZ-Bedrijventerrein Breda-Oost' and is the organization established in 2017 that is responsible for managing the industrial zone Minervum in the east of Breda, North Brabant. It has a yearly turnover of 300.000 euros (Breukel, 2020).

BIZ stands for "Bedrijven Investeringszone" or "Business Investment Zone" and it tries to create an organization that wants to further the goals of the terrain by spreading the costs according to the needs of its occupants. This means that it is there to cater to everyone involved with said terrain too. The BIZ comes up with a plan every 5 years to further the goals of the park, but in order to put the plan into action at least 50% of the 500 businesses that occupy the district have to agree with the BIZ (Breukel, 2020). The goals that the BIZ would like to address are shown in the diagram below (3B-O, n.d.).

Figure 1, Goals of the BIZ (Security, Quality Improvement, Image, Greenery, Traffic and Green Entrepreneurship).

The first BIZ was focused on the first 3 goals, with special attention for security. Soon, the first period of five years is coming to an end, so the BIZ is setting up a new plan for the upcoming period. Within this new plan, the challenge will be to focus on the latter 3 goals as Green Business Management is getting more and more importance in modern society. 3B-O wants to transform Minervum to the most appealing Industrial Zone of the Netherlands. The current plan also includes placing a wind turbine to get more self-sustainability in the area. Although, with such great plans it is a challenge to let around 500 businesses agree on something. Every business has its own size, problems and vision (J. Koertshuis, personal communication, March 12, 2020).

Figure 2, BIZ area 3B-O from the air (Google, 2020)

3. Current business model

Within this section of the report, the current business model of 3B-O will be mapped with three different tools. Firstly, with the business model canvas of Osterwalder (Bron BM Canvas), with later specification into the three layers from the people, planet, profit perspectives. Secondly, the business structure of 3B-O will be mapped with the Business Model Connect tool (Brehmer et al., 2018). Lastly, actor analyses will be made out of the perspective of a company in the business area with the ecosystem pie tool (Talmar et al., 2018).

Triple-layer Business Model Canvas

The business model of 3B-O is interesting in the fact that the customers also are their key partners. The left side of the business model is in essence similar to the right side of the model. The whole canvas is visible in figure 3 and Appendix C. To create this business model, the theory from both the original business model (Osterwalder & Pigneur, 2010) as the Triple-layer business model from Joyce & Paquin (2016) is used. First, we will look at the original business model while specifying the additional two layers afterwards.

Original Business Model Canvas

The core value of 3B-O is to improve on the goals described in the BIZ. The current BIZ was mainly focussed on the security of the location. The value delivered was, in this case, a safer environment for the companies to operate by providing security cameras and guards. Secondly, there was a focus on the general look and of the location and the infrastructure.

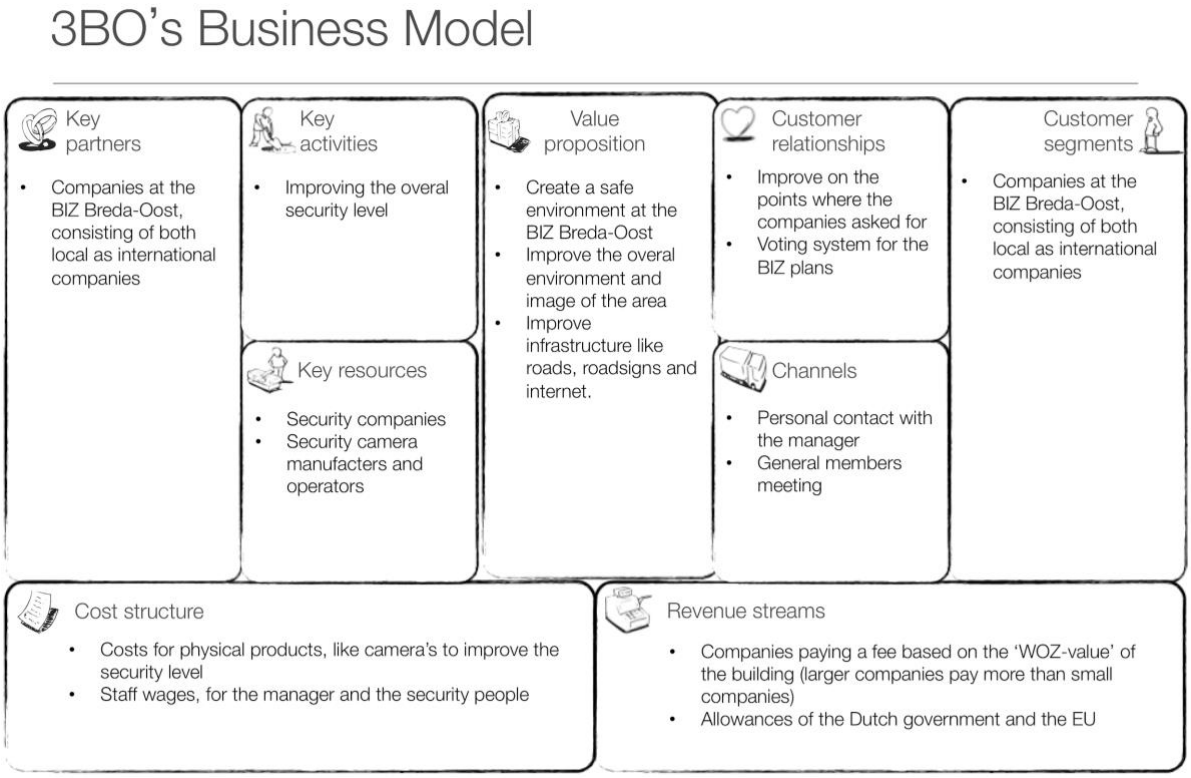


Figure 3, the business (economic) model canvas of 3B-O.

The customers of 3B-O are the companies based in the Minervum business area. A special note, when a company establishes on at the business park they have to collaborate with the BIZ. Since 3B-O is a business as well, there is a B2B (business to business) situation. Although you could also argue

that the customers of the business located in the area are part of the customer segment. In that case, the situation could best be described as B2B2C (business to business to customer).

3B-O has often personal contact with people of the businesses. Also, there are several general member meetings, which is another way to stay in contact. Furthermore, when everything is well organised by 3B-O there are no complaints so the situation is good. Lastly, to establish a BIZ plan, at least 50% of the companies should vote of which 67% of them should be in advance.

With the current BIZ, the main activity was to improve the safety and so the security all over the terrain. To achieve this, resources are needed from security companies and security camera manufacturers. These resources are the largest expenditures of 3B-O, while another expenditure is staff wages. Although, the key-partners are again the businesses located at the Minervum business park. They decide together what 3B-O works on, also they provide the funds. Additional income is generated from the allowances of the EU (J. Koertshuis, personal communication, March 12, 2020).

Additional layers of the business model canvas.

Since 3B-O is almost a non-profit organisation helpful there will certainly be interesting aspects within the social and environmental layer of the business model. As described in the problem statement, 3B-O wants to motivate all companies in the business area to be more sustainable. Analysing the current state could be helpful. Also, the safety of the business park has an influence on the social aspects (J. Koertshuis, personal communication, March 12, 2020).

To start with the social layer of the canvas, further details in Appendix C. The most important social value created is a safer environment and so a more enjoyable area. Especially, a safer environment in the area creates social value, people are feeling more comfortable in a safe area. Other important social benefits are community engagement. The collective BIZ forces companies to collaborate with each other and all together come to a plan for the whole area. Jeppe explained in the interview that many companies know each other, in the same way as you know your neighbours. 3B-O encourages these companies to work on projects together to further develop a community. The only downside is that all businesses are obligatory to fund the BIZ when you do not like the plans this could have negative impacts.

About the environmental model, 3B-O does not produce any products, therefore it is difficult to define the environmental impact of production, end-of-life, etc.. Although there are some interesting environmental aspects for 3B-O, mostly related to renewable energy. For example, a collective windmill will be placed that would generate electricity for the businesses in the park. Also, there are initiatives for solar-panels on the roofs of the buildings, which has some complications because many roofs are not strong enough for the weight of solar panels (J. Koertshuis, 2020). According to an analysis for an energy transition, the plan is to safe 100.00 GJ of energy and produce another 194.000 GJ to become fully sustainable in energy (See image in appendix C for details).

A second aspect with a positive environmental impact is the collective use of products and systems. All the security services and products are shared between all companies which means that the resources are used more efficiently than when everyone would have a system on their own. Also, working together could make it easier to achieve renewable energy sources (Rijksdienst voor Ondernemend Nederland, n.d.).

Business Model Connect

The business model connect tool (Brehmer et al., 2018) is a tool to simplify a company structure with its key components. For 3B-O we have again a special case, although it looks most similar to a symmetric multi-sided platform. Multiple businesses are connected by something like a platform, all companies are working together under the lead of 3B-O with the according to BIZ. If more

companies are connected, there is more value because than 3B-O has more funds to achieve something. Nevertheless, within the network, there are both links between companies and consumers as between companies (J. Koertshuis, personal communication, March 12, 2020). The business model connect diagram can be seen in Appendix C.

In the end, value is created for the businesses within the network by providing them with several collective services, of which currently security is the most important one. All the systems used are owned by the collective, which means that in the end, everything is more efficient than 500 separate systems. All businesses pay a fee based on how large the company is per year, which makes sure that the systems deliver value for everyone. Otherwise, when a small company has to pay the same amount as a large company, the value created would be the same but the price to pay for the created value would be too high for a small company.

This strategy is sustainable in the fact that collective processes are more efficient or a collective goal, for example, a safe environment in the zone, is achieved with fewer costs than when all 500 businesses do their own thing. For safety, for example, one connected camera system needs fewer cameras and control rooms than multiple camera systems to cover the same area. The strategy is also durable for the long term, investments are made regardless of a single company. When a company decides to move, the system stays and the new company will make use of it.

On the other hand, until now there were no policies or restrictions about sustainability for a company. The products sold by a shop could be produced with a high environmental impact but then sold by a 'green' shop, powered by renewable energy. The same case with garbage, there is no control about what scale garbage is recycled or reduced in amount.

Ecosystem Pie Model

For the ecosystem pie model (Talmar et al., 2018), both 3B-O as one fictive company located in the Minervum area is mapped to see the influence of 3B-O on that company.

For 3B-O the ecosystem value proposition would be to create a safer business park with easy access to the basic services. The end-users are the business located in the park, and the core actors could be described as the service providing companies. Since 3B-O is only the director of everything, they need help from external companies to provide the services. Mostly the business in the area benefit from being part of the ecosystem, they have easy access to basic services which help them in doing their business. Additionally, the value of a safe environment is valuable for both the companies as the customers of the companies. Without customers, there is no demand for products. For 3B-O the companies are the highest risk factor, they have the power to decide what 3B-O should do and provide the funds. Also, they could move to another location with possible better benefits.

For the fictive company, we chose a medium-sized furniture producer and seller. This company would have an interesting supply chain of products with local influencers because of its medium size (Ronald Verdult Design, n.d.). The full model can be seen in Appendix C and is made with information from Verdult, R (n.d.) the CEO of the company. We could conclude out of this model that the influence of 3B-O on the whole organisation is limited. The main role of 3B-O is to provide services to the business that makes certain processes or decisions easier while the company pays for that service. We defined the corresponding risk as low because the company has enough influence on 3B-O and changes are very predictable.

4. Regime

In this chapter, the socio-technical regime will be explained based on seven regime dimensions. Socio-technical regimes are dynamically stable, meaning that innovation still occurs but only in an incremental manner. Local adaptations may be possible, but it is difficult for actors to radically deviate from basic regime rules (Bidmon, C.M. & Knab, S.F., 2017). The company has changed its focus point from recognizability, sustainability and security to smart cities, security 2.0 and further sustainability. What challenges this will bring and why companies are sometimes not interested or tough to convince will be explained by using examples.

Policy and regulations

There is too little government intervention and therefore the companies do not have to change. The government leaves the transition to a more sustainable society to the assessment made by individual companies and citizens. The required behavioural changes will be made insufficiently or too late. This is especially true if there is accumulating damage; when the behaviour of one individual hardly causes damage but the sum of the behaviour of many individuals leads to damage. For example, the exhaust gases from all cars in the Netherlands together (Wesseling, M.F., 2013).
The government does encourage entrepreneurs to invest in sustainability. High on the list of priorities of the Dutch government is making the economy more sustainable. Although many entrepreneurs would like to contribute, research by the Chamber of Commerce (Kamer van Koophandel) shows that they often lack time and money for this. Therefore, the government offers the Sustainable Energy Investment Subsidy (ISDE) to reduce gas consumption and stimulate the heating of business with sustainable heat in the coming years (SubsidieFocus, n.d.).

Infrastructure

It is challenging to make outdated industrial halls energy neutral. It is possible to make older industrial buildings energy neutral but there are two problems. The first problem is costs. The second problem is that companies would like to have a single complete plan to tackle their hall, at once or in phases. However, there are hardly any providers of such a complete plan (te Bogt, A., 2019).
The energy grid cannot handle the electricity supply. The aim of the Climate Agreement is to have a completely CO2 free electricity system by 2050. Existing fossil sources (natural gas, oil, coal) of electricity will be replaced by renewable sources of wind and sun (RIVM, n.d.). More sustainable electricity projects increase the demand from the electricity grid. To prevent the energy flow of new projects from being transported less or not at all, the grid managers will have to strengthen the grids so that they can handle more power which can take years (Ministerie van Economische Zaken en Klimaat, 2019).

Culture and symbolic meaning

People care about what other people say or do, so a reference point is important (Steg, L. 2020). In order to stimulate the sustainability of consumption, it seems useful that the government emphasizes the pleasure of individually contributing to sustainability and ensures that the individual consumer is sure that enough others are also buying more sustainable product variants (Planbureau voor de leefomgeving, 2013).
Sustainable innovation would be better promoted if more attention is paid to the symbolic properties of the innovations. A good predictor for the adoption of sustainable innovations is the

perceptions of the symbolic properties. Symbolic meaning for people depends not only on what adoption says about a person towards others but also about the person him/herself (NOW, 2018).

Techno-scientific knowledge

Sustainability is a multidisciplinary concept but scientists often stick to their own discipline. There is an enormous amount of knowledge in science but the companies who want to integrate sustainability lack a link with the knowledge (DuurzaamBedrijfsleven, 2012).
The business community is increasingly dependent on publicly funded research. Our modern knowledge of society cannot do without high-quality education and a successful science sector. Companies expect and have to rely on the contribution from universities and institutes to their innovation agendas (NOW, 2010).

Markets and user-practices

Power suppliers still largely offer grey, polluting electricity on the business market. While the business market uses more than three times as much electricity as consumers, the energy suppliers on the business market are less committed to the climate than suppliers on the consumer market (Duurzaam Ondernemen, 2019).
Consumers have a more critical look at empty promises. The amount of consumers who are willing to pay extra for sustainable products or activities is increasing. However, at the same time the mistrust of sustainability claims has also increased (GfK, 2018).

Technology

It is unclear how sustainable, sustainable technology actually is. It also costs raw materials and energy to make for example solar panels, windmills and car batteries and it also leave waste behind. However, it is difficult to find out how the costs and benefits compare (Redactie PCM, 2018).
The wealth of companies differs and this can reinforce social differences. Only companies with a large equity capital can benefit from sustainable technologies because even with subsidy schemes, initial investments remain necessary. Companies with a small capital simply have no investment power for this but will see their fixed energy costs rise (natural gas prices will also rise). This leads to differences in purchasing power and reinforces social differences (ECN, 2017).

Industrial networks

Companies do not work together to achieve sustainable ambitions as it is time-consuming and complex. A number of companies are working on sustainability but in their own business operations. There is no coherence or joint direction of a business park, which is caused by the fact that there is nationally hardly any policy for the sustainability of business parks (Van Nispen, H.,2019).
Companies have to rely on socially responsible acting suppliers. The behaviour of suppliers determines the reputation of the enterprise. Integrating social and environmental criteria in the purchasing process is not straight forwarded, after all, there are thousands of suppliers (van Tilburg, n.d.).

5. Opportunity spotting, integration and validation

A. Opportunity spotting

Within opportunity spotting, competitors and similar situations from different sectors are analysed with the goal to find useful information which can be applied in the 3B-O case.

Competitor analyses

3BO is a standalone organisation that brings and thrives through the companies present in the industry, while also relying on them. Since the company created “an industry park island” they are not influenced by outsiders as normal competitors would do. Therefore the search was more focussed on other business parks. However, every business park has similar approaches, but the key organizer changes. The goals are the same in the sense that they want to create a cooperative business park with a collective mindset and goals. This can be achieved by different mediators such as the municipality, the companies themselves or in this case an external company like 3B-O. The company type with a BIZ model like 3B-O seems to be the most effective because their only focus is this business area and close link towards the business park at stake. Therefore for this chapter, the focus will lie on other BIZ oriented collaborations to spot the differences that could enhance 3B-O’s model.

For the comparison the following competitors are chosen: BIZ Vianen-centrum and BIZ WBC, Zwethove, Wateringse veld (Al, 2016; BIZ WBC, Zwethove, Wateringse veld, n.d.). They also use a BIZ model and are thereby comparable to 3B-O. The Vianen case is also chosen because of the companies working together. Rather than a business park it is a shopping centre and thereby holding different values and goals. By analysing this BIZ different elements might show up that could also be beneficial for the business park. The WBC case was also chosen due to its steps towards sustainable energy and lowering energy consumption.

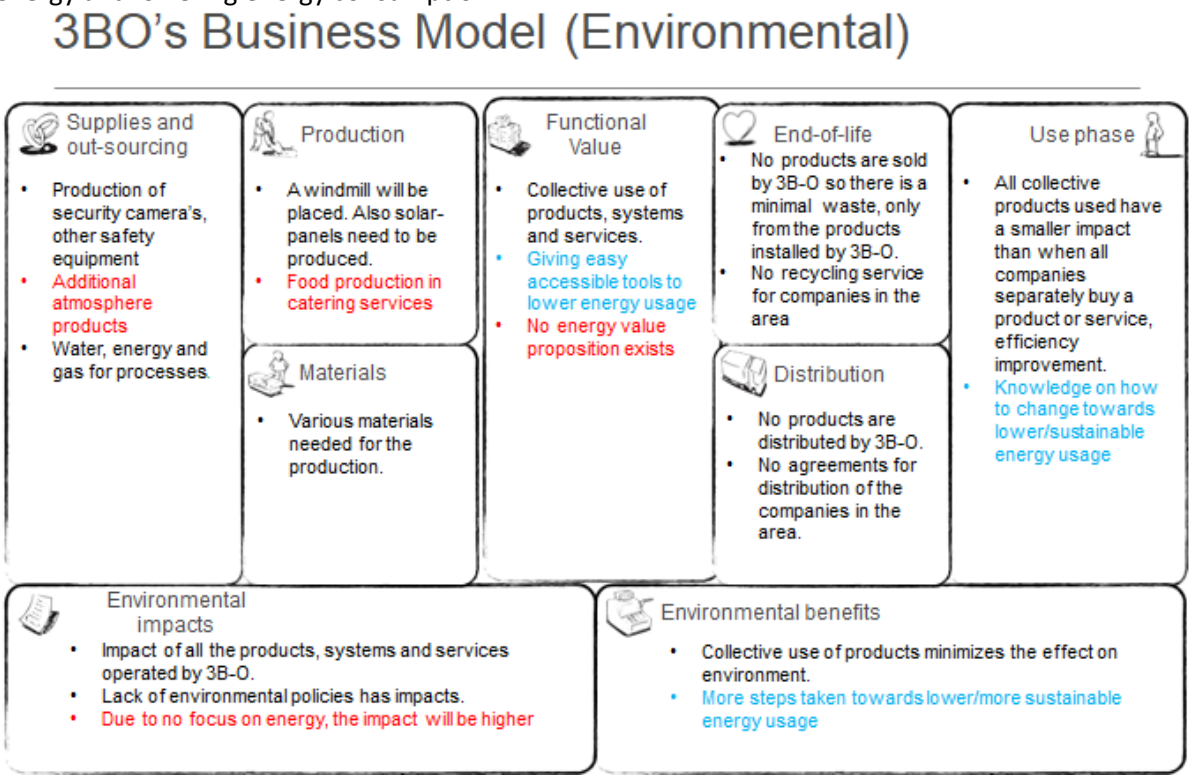


Figure 4, the environmental business model canvas of competitors

In the business model above all three cases are analysed and combined into one canvas (the environmental is shown here in figure 4. The social and economic canvas is shown in Appendix E). The colours show to which case it applies: Black serves both cases, Red shows the Vianen case and Blue shows the WBC case. For each case, three differences and similarities will be described. The business model connect model does not differ from 3B-O in both cases. The only difference there lies in the targeted audience for Vianen since they focus more on direct consumers.

Vianen

Vianen centre differs from 3B-O since it focuses on a shopping centre rather than a business area. However, it remains a BIZ oriented organisation and therefore there are similarities in its approach:

- It uses the same democratic approach in terms of creating a plan to tackle the common demands of the companies in the centre by an external company. surrounding demands provided by the companies within the centre. These companies then vote if the plan should be executed or not.
- Finances are provided through the companies involved at the centre. If the plan is accepted they also agree to provide the finances for these plans.
- The companies create a cooperative community from which everyone, including visitors, benefits while removing free riders.

On the other hand, it differs from the 3BO case since the values, needs and demands are different for the companies within the Vianen centre. This changes the business model in various ways:

- The value for the BIZ Vianen is more focused on social values than environmental values. This is visible in the fact that the BIZ Vianen has set no goals related to energy or CO2 footprint in the products.
- On the other hand, social values are more important. By creating a more appealing city centre with various ambience improving products and plants, more visitors will come. These visitors will then visit the shops and thereby the companies create more revenue.
- An appealing environment will attract other activities such as festivals. This, of course, leads to additional revenue, but it also gives additional marketing by word of mouth and it creates a solidarity between the shops, the city and its inhabitants.

WBC, Zwethove, Wateringse veld

WBC, Zwethove, Wateringse veld are business parks in the neighbourhood of the Hague. They have a similar approach to 3B-O since the environment is the same and also uses BIZ as the main approach. Therefore the number of similarities to 3B-O and the BIZ approach are high:

- It uses the same democratic approach in terms of creating a plan by an outside company surrounding demands provided by the companies within the centre. These companies then vote if the plan should be executed or not.
- Finances are provided through the companies involved at the centre. By voting in favour of the plan, they provide finances for these plans.
- By doing so the companies create a cooperative community from which everyone, including visitors, benefits while removing free riders.
- The values, needs and demands are the same for 3B-O and WBC. They both focus on security, infrastructure and representativity

Differences are therefore smaller, however, WBC does show some additional steps and depth to their business model:

- Steps have already been taken toward sustainability. WBC introduces tools to the companies at their business park through which the companies can test their CO2 footprint and energy consumption.

- There is more knowledge about how to make the park and buildings more sustainable. The lack of knowledge is most of the time a problem, rather than motivation. Once the opportunities and benefits are clear the companies are willing to act to it.
- They are a bit further on developing a collective supply of renewable energy with solar panels to lower the usage of fossil fuels.

Opportunities

The elements that could be implemented in the 3B-O cases are the main points of the competitor analysis. The tools that WBC provides are easily transferable because these tools are available and provided by external companies. The most interesting thing to take away from this competitor is the fact that companies are willing to change if you show them what and how they can change and how these changes benefit them in the long term. These benefits might apply in different areas such as meeting policies, energy costs in the long run and marketing features.

Vianen shows a different value proposition which might be interesting to look into. Their focus on pulling more visitors towards their centre and thereby creating more solidarity between inhabitants and the centre is a value that is not covered in the 3BO case. It might be interesting to see how more solidarity with the city and its inhabitants can be created through events. By doing so a higher awareness among the inhabitants for the companies is created, which might result in a greater revenue stream.

Companies in different sectors

To compare the case of 3B-O with other companies in a different sector, it has been decided to search for business parks with aspects of sustainability in their value proposition. This has been done in order to look in which aspect of the business plan the companies relate to each other, and in which aspect they differ, and how this can enhance the business model of 3-BO.

Park20|20

Park20|20 in the Haarlemmermeer near Amsterdam is a full-service Cradle-to-Cradle (C2C) optimized work environment. Sustainability, ecological design and the focus on human well-being are highly representable for this park (Park20|20, n.d.). First of all, Park20|20 is chosen for its focus on human-centred design. The human-centred focus is interesting for comparison with 3B-O's case, to see if it can show another perspective on the use of sustainability for the sake of social benefit.

Moreover, Park20|20 is chosen for its C2C approach. This approach is characterised by three principles derived from nature: complete the cycle (waste does not exist), use renewable energy and celebrate biodiversity. In nature, all 'waste' is a resource for something else. This comes back in the re-use of materials of the buildings in the park. The sun, wind, geothermal and gravitational energy are used. Diversity is celebrated and simulated by the integration of green in buildings, the creation of bee and butterfly colonies and the cultivation of on-site organic produce (Park20|20, (n.d.). These principles are embedded in the business approach. Therefore, it is interesting to see how 3B-O might benefit from this C2C approach in their case, on an economic, environmental or social level.

BIC

On Brainport Industries Campus (BIC), the most innovative and successful companies and institutes of the Brainport region in Eindhoven will come together as a single powerful entity. BIC is remarkable for its open environment where both innovations and education as manufacturing facilities are shared between the companies, all with the focus on high-tech manufacturability (BIC, the proposition, n.d.).

BIC is chosen because of its approach of doing business, innovating and producing together. The benefits are offered in three areas: economic, reputation and innovation benefits (BIC, the

proposition, n.d.): The park will have its shared services and general facilities in the middle of different building clusters. The building clusters consist of physical building units and functional built-in modules, ideal for the flexibility, scalability and shared usage opportunities of the companies.

The Brainport region attracts a high level of investments and is on a global level a well-known high-tech area. Because of this enormous global impact, the level of collaboration is of great importance. Companies, knowledge institutes, research organisations and government bodies jointly participate in development. This approach of forming a unity to benefit in multiple areas is interesting to compare with 3B-O. Especially to look for possibilities of how collaboration between companies ensures sustainable benefits.

Osterwalder Canvas and Business Model Connect

The most important components of the business models are discussed below. The other components of the Osterwalder Canvas and the Business Model Connect for both companies are presented in Appendix E. The canvas clearly shows the distinction between the companies, where Park20|20 is represented in red, and BIC in black.

Park20|20

Park20|20 provides the companies on the area a C2C-based full-service work-life environment. Human well-being is their focus point. The environmental value originates from the park striving for a closed-loop on material, water, energy and waste management. Moreover, biodiversity is stimulated, as was mentioned earlier. The social value is created through the focus on a balanced and full-service life-work environment. This is generated by the use of the ergonomic architecture of buildings, the green environment, use of water, various meeting spaces, restaurants, gardens, gym and supermarket (Park20|20, n.d.). With its Cradle-to-Cradle® approach, the park is definitely supporting a circular economy.

The business model is a combination between Business-to-Business (B2B) and Business-to-Consumer (B2C) since the buildings are hired by other businesses, but some of the facilities and services (e.g. restaurants) are directly aimed at the consumer. The basic business model structure of Park20|20 comes down to a make-sell structure, where Park20|20 is directly designing and offer the buildings and services to the companies and their employees. The value created, in terms of buildings, services and the environment, are all durable in their nature, and do not imply ownership.

Brainport Industries Campus

On the BIC there is an interplay between companies, knowledge institutions, research organisations and governmental organisations. This results in an open environment for sharing innovation, education and manufacturing facilities, focusing on high-tech manufacturing. The accommodations and facilities are flexible, scalable and can be shared, by a pay-per-use system. This reduces both costs for the companies as the impacts on the environment. The campus is striving for an energy-neutral campus (BIC, sustainability, n.d.).

The business model structure comes close to a symmetric multi-sided business and make-sell business platform, where BIC has different functions. It mediates the exchange of valuable content between the companies and organizations on the campus area, and it also creates value for the companies and organizations. So, it bends more to a combination of the two business structures. Furthermore, the value creation is durable, and the companies and organizations have access to it, instead of owning it. Considering the pricing mechanisms, the companies pay-per-use for the manufacturing facilities.

Similarities between Park20|20 and 3B-O

- Both parks are focussed on improving the environment and appearance of the area, for the stakeholders (companies, employees) involved. For 3B-O, this results in service providing for a

safe and clean environment on-site. For Park20|20, this results in a more balanced work-life environment.
- Both organisations stimulate the cooperation between the stakeholders for shared products/services, by providing products and services for all the stakeholders involved. For 3B-O, this is more or less only products. Park20|20 also shared services and facilities.
- Both have an influence on the social culture in general, as being a culture of co-operation for shared values and beliefs. Both are working towards a park that includes all the stakeholders, and create a sustainable atmosphere for them, from an economic, social and environmental point of view.

Differences between Park20|20 and 3B-O

- 3B-O creates value and makes decisions on more cooperate levels, where Park20|20's value proposition is more or less fixed. the stakeholders do not have a lot of influence.
- Park20|20 started from scratch with a closed-loop material, water, energy and waste management. 3B-O only started to concern about sustainability recently.
- Park20|20 has its focus very much on the work-life balance and the well-being of the employees. 3B-O however, is established mainly to manage the park from a functional viewpoint, of costs spreading and providing more general needs.

Similarities between BIC and 3B-O

- Both parks have close cooperation with their stakeholders, where the decision-making operates in a collaborative manner. For both parks, this stimulates the environment for sharing services, products and facilities.
- The effect of the societal culture in general, both parks stimulate the culture of cooperation and unity for shared values and beliefs. For BIC, this results in stimulating the region of Eindhoven and Brabant (to a global level).
- Both organizations originated from scratch, from an initiative of the stakeholders. They are both created for cooperation.

Differences between BIC and 3B-O:

- BIC is mainly created for high tech manufacturing companies and their innovations for one market, the manufacturing of high-tech products. It differs therefore from 3B-O, which is not established for one particular market, but rather for businesses in a wide range of sectors.
- 3B-O is created over the years of an existing business park, where the BIC was created from scratch in a new business area. This brings them the advantage that all companies established there have the same mindset.
- BIC also provides education, innovation and production facilities. It depends on whether this is shared between all the companies/institutions, or just several. 3B-O, however, only shared services when they are applicable to everyone in the park.

Opportunities

As the similarities and the differences for the business models of Park20|20 and BIC between 3B-O are distinguished, there are multiple parts that are interesting to transfer to 3B-O's case:

- To put more focus on the human well-being of the employees (and their customers). The ergonomic architecture and shared service providing (like a supermarket) of Park20|20 are rather hard to implement. Implementing green spaces would be a very feasible start. It will be less costly and might be governed by the municipality, and is flexible in its scalability and position on the Minervum area.
- To start sharing more than just services with each other, but also products, innovation and or education/knowledge. This is hard to implement since the situated companies are high in variety with respect to their value proposition, business model. However, what could be possible, is to analyse the business models of all companies and see where partnerships,

activities, resources or other components overlap and can be shared. 3B-O might start this with monitoring on a platform, about the problems, the question needs from the companies for the sake of value creation through “access to value” instead of “ownership of value”.
- Implement the Cradle-to-Cradle® philosophy into aspects of the BIZ. It is more or less a combination of the previous 2 options. With implementing greenery, there can be looked at a way of stimulating the biodiversity of that area. With the sharing of knowledge, products and services, there will be fewer resources needed, and waste can be reduced and recycled. Moreover, there can also be looked at how the current services and products (security equipment for instance) can be made of C2C-certified materials. Also, the region of Breda could be involved in the search for sustainable value creation. For example, give people a distance from the labour market an opportunity to be of service for the area, in collaboration with the municipality (*Participatiewet*).

Business model research

To find a revised model for 3B-O some relatable concepts have to be found that can be linked to the concepts that arose following conversations with Jeppe Koertshuis and the business model that arose following the context analysis. For this analysis, three papers were analysed written by Short (2014), Gassman (2018) and Taran (2015) respectively. These concepts can then be translated into new business models that can be used for 3B-O.

Short - Technological - Value from Waste

Creating value from waste in an industrial setting is a rather common practice as recycling and repurposing have seen a rise in popularity in the last years as concerns about the health of the planets are starting to come to a tipping point. In the case of 3B-O waste has a way broader definition than just garbage as it is seen in the traditional sense. For the case of electricity, according to Jeppe Koertshuis, an interesting concept to explore is to make use of a smart grid that can distribute excess power to small consumers to make sure none is wasted and of course, the businesses can get compensation for sharing their energy with their neighbours.
- Can be represented in a new business model, as this can be applied unto an industrial zone.
- The relatively undescribed aspect of the “sustainability” 3B-O wants to achieve.

Short - Social - **Sufficiency**

Encouraging Sufficiency is one of the main goals of the BIZ, especially the sustainable use of the available resources without needing to depend on outside sources. The best way to tackle this as of yet is by actively monitoring the businesses on the park and creating a platform for them to see where they can spare on resources. This platform is also there to improve the interaction between individual companies as well as the interaction between 3B-O and said companies.
- Creating proper communication and awareness which is hard with 500 different companies.
- Trying to create a desirable image of the BIZ so companies are more inclined to vote in favour.

Short - Organizational - **Scale-up solutions**

The main issue with managing 500 differing companies is finding solutions that are applicable to everyone individually but do not hinder the park as a whole. 3B-O has already made it clear that they really try to provide the same product to everyone. A proper way of finding solutions might be setting up a forum for companies where they can discuss their problems so everyone can see what they’re dealing with and help where possible.
- Trying to find solutions that can benefit single businesses, but also the entire park as a whole.
- Creating platforms for open innovation so companies have access to specific solutions.

Gassman - Crowdsourcing

Crowdsourcing means that the solution to a problem (creating awareness about sustainability) is adopted by a crowd, in this case, the companies at the business park. If a company has an idea to improve the business park in the field of sustainability, the company could be rewarded for this. This

reward can be both financial or in terms of promotion e.g. Hopefully the companies will collaborate with 3B-O in an extensive way since they see the possible advantages in a clearer way.

- Can create possible prizes for companies to come up with creative solutions themselves. This might be a positive incentive for them to actively collaborate with 3B-O.
- Opens possibilities to have more customer interactions between businesses and 3B-O.

Gassman - Pay-Per-Use

Pay per use means paying for the usage of something, instead of ownership. For example, solar panels can be shared between companies, where companies only pay the amount of kWh that they actually use. This will make sustainability measures more reachable for companies and at the same time it stimulates to reduce (energy)consumption. Since companies share for example solar panels and they pay only what they use, the energy generated by the panels can be spread more efficient over the companies. A smart grid can be used for this so every company gets exactly the energy they need. This innovation contributes to creating a smart city.

- Proportional payment according to metered use. More interesting for small companies that are wary of paying for services that they will not use.
- Contributes to the idea of a “smart city” (Smart Grid).

Gassman - Open Business Model

Open business models create more collaboration between partners in an ecosystem. In this case, it concerns the interaction between the different companies at the business park. Their increased collaboration can result in the set up of shared facilities, which improves both the satisfaction of the companies as sustainability, since not every company needs their own facilities. Another advantage could be increased transparency. If sustainability goals, like reducing CO2 emissions are reported more transparently to other companies and consumers, there will be an incentive to really work on these goals. Companies who take sustainability into account will create a better image to their customers and partners. In the end, this can improve market share.

- Creates more collaboration between companies as they have to actively search for solutions with each other and outside parties. Opens up more possibilities for shared facilities.
- Can be linked to a transparent platform that shows a positive appreciation towards companies that contribute more.

Taran - Multisided platforms

Creating a distinction between small companies and larger companies is a somewhat unconventional approach as it is not what 3B-O hopes to achieve. But by doing so it might be easier to get the individual groups to agree to plans that cater to their specific scale. As small companies are usually unable to make substantial investments. This could lead to a small range of plans where a company can choose the amount of money they contribute and get rewards based on which section they fall into. This also means that smaller companies that do wish to invest more will reap more benefit, while large companies that invest less will see fewer benefits.

- Works around the distinction of different groups of customers that can be addressed simultaneously.
- Opens up possibilities for proportional payment of the plans, according to their group

Taran - Instant Gratification

Investing in sustainability measures, like solar panels or a wind turbine, brings high initial investment costs for companies. To make it still possible for (smaller) companies to benefit from these measures, a second party like a bank or government could be involved to do the investment, whereafter the company pays the ‘loan’ back to the financer. Basically the idea of a mortgage. This will make it possible for more companies to participate in the energy transitions and the pace of the process can increase since the initial investment costs disappear.

- Mortgage giving companies resources that would require large investments, but only having them pay small bits at a time.

- Can make the investment plan a lot faster as transactions will be mostly instant.

Taran - Outside-In

Outside-in means that a company gathers information and knowledge by involving external (innovation) partners and research communities in the processes. The advantage of this approach is the increase in potential knowledge and the possibilities of doing research. At the same time, the proposed solutions by the external partner can function as a business model for them, so 3B-O can step out of the process while the partner is exploiting the idea, which can possibly be scaled up to other business parks. Also, voting for the plans of 3B-O is not needed if an external partner exploits the innovation.

- Outsourcing research and looking for innovative partners. Creating business opportunities that would not be possible by just focusing on Minervum itself.
- This creates a more applicable business model that could also work on other BIZ's.

B. Integration

Three possible new or adapted business models are presented in this chapter. As well as an argumentation which of the concepts would fit the best for this case.

Monitoring

- Monitor the energy usage and CO2 emissions of each company
- Rank them and publish it to partners and consumers (via website/media) to create competition at the business park

The first approach is the implementation of monitoring companies and their processes in various ways. Think of simple actions like measuring electricity and gas usage. But also about more complex interferes such as complete scans on company processes and how to find other, more sustainable substitutes. Together with a live feed with sensors and algorithms that calculate the CO2 emissions by implementing every source of emission (think of transport, production, building etc.) competition at the industry park can be created. Through creating a positive rivalry between the companies an intrinsic motivation will form (Kilduff, 2014). The competition in the form of a ranking system will be open and transparent towards the other companies and more importantly the outside world. This on its own has its intrinsic benefits, since the companies do not want to be put in the bottom scores leading to a negative reputation. Besides this, it is easier to approach the companies for their permission to publish their emission data, instead of demanding a lot of investments from them immediately.

The national government is already sending out policies to ensure sustainable development within companies and also creates media and social attention to these aspects. By taking a step further than just meeting the policies, an additional positive image of the company would be created. Therefore, one of the two possible rewarding systems for this competition is as follows: Create prices for the best performing company in the form of a title or a label. For example: “Most sustainable company at Breda-Oost” or maybe something more specific such as “Highest percentage use of green energy” or “Highest reduction on energy usage”. Together with the transparency of showing the data creates a beneficial reputation. External factors like suppliers and their emissions could also be taken into account. But also on social contribution, companies that put in additional work towards social sustainability should be credited for doing so.

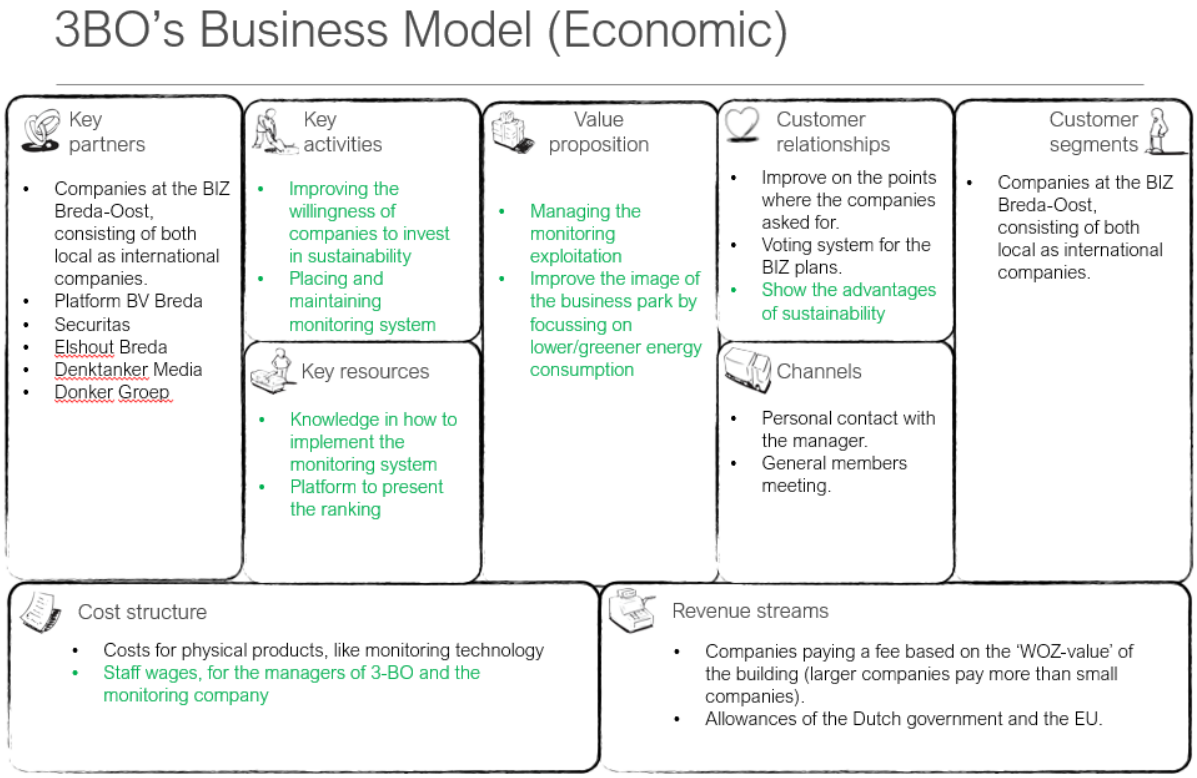
These elements are also visible in the opportunity-seeking chapter. The transparency shows an open business model and the healthy rivalry stimulates sufficiency and a stronger community (business model research). This unity and community are also present in companies from different sectors.

Motivation is not always the problem, in some cases, companies do not know how to change. Showing different scans of their process and live information about their power usage might show perspective on how to do so. It is important here to show the different options which might help. A straight forward example might be the implementation of power-efficient LED lights in buildings., It will always be important to show both the economical as the environmental benefits of investment in the long term. The same goes for lowering materials used for packaging. This has environmental benefits but also economically since it uses fewer materials.

Since the BIZ will end after 5 years, the CO2 emissions and other sustainable actions will be monitored by an external company/commission. The monitoring company will publish the ranking at their own website, but to be more effective, it would be great if the ranking gets media attention as well. Additionally, companies with a good ranking will probably publish it at their own website and to their partners. An advantage of this Business Model is that it is easily scalable to other business parks and other companies in general. It should be a universal label, like already existing energy labels for electronics. The companies which take this serious will, in the end, see their market share

probably increase, because of the increasing awareness about sustainability by consumers and companies.

From a psychological perspective, additional theories show the benefits of creating the rivalry and a group forming as a whole for the performance (Kilduff, 2014). People and therefore also companies tend to mimic for a smoother connection. (Chartrand & Bargh, 1999) They don't want to be seen as the outsider of the group so in this case the industry park. Especially if it is transparent and open to the outside world. This sense of conformity is created through both normative influences and descriptive norms. Normative influences are a sense of other people's judgements (Asch, 1956). If the group is forming towards more sustainable behaviour they will frown upon the company that does not, both by the inside group as outsiders. The descriptive norms explain that we act as most people around us do (Cialdini, Reno, & Kallgren, 1990). Therefore if a group that you are a part of behaves in a certain way, you are likely to follow this behaviour. These theories only strengthen the BIZ as a whole, but additionally also if a group starts to shift into new directions such as sustainability.



*other figures are in appendix F

Local connection and knowledge sharing

- Set up a committee/group of companies that are already convinced to go for sustainability
- This group will become an example and other companies can join
- The local connection with schools and citizens and a platform for sharing knowledge between the companies

In this second business model, there will be explained what the influence could be on sustainability if a committee and a platform are set up.

Committee

Established companies are not keen on shifting away from the regime. The only way to get companies to shift away from the current regime is to prove to them that the current system is not the most efficient system. Thus by creating some kind of committee that is the "guinea-pig" of the

area, it will become visible for other companies what kind of improvements can be made.
For this committee first, an organizational form needs to be established. In this case, the park management form is suitable. The park manager needs to involve enthusiastic entrepreneurs, other stakeholders and an energy team. This energy team and the park manager will firstly map out what the companies demands are. Afterwards, the energy team can select the best measures to meet the demands and can help the park manager to encourage entrepreneurs to take these sustainable measures. By first gaining insight into what is relevant for the companies in the business area, there is an increase in chances that companies actually want to invest in the measures.

This committee will first not be part of a BIZ, but if it ends up working within this small group it could be possible to scale the solutions ups to the entire BIZ. A step further is to look at results of the committees of other BIZs for inspiration. Also, the committee responds well to one of the opportunity found when doing the competitor analysis. The opportunity stated that companies are willing to change when it is presented to them what and how they can change and how this would benefit them. This is exactly what can be shown with such a committee.

Platform

Elaborating on the idea of sharing solutions it is also possible to set up a platform to share problems and beneficial solutions with the BIZ and other BIZs. This could be used to establish a new regime in which the businesses can get more profit in ways that also improve social cohesion. This also opens up the minds of businesses to ideas they would not be willing to adapt to in their practices if they were prompted to without any form of proof it will benefit them. This platform can also be expanded to maybe include some institutions outside of the BIZ that could offer valuable insights into problems that cannot be solved by just staying within the safe perimeter of their own park. This connection is, of course, bidirectional and organizations will be able to learn from the BIZ as well. This platform fits well with an opportunity found during the analysis of companies in different sectors. The opportunity was to start sharing more than just services with each other, but also products, innovation and knowledge. By including institutions and organisations outside of the BIZ, there will be a large exchange of knowledge, which can lead to more innovations.

Fits

- Industrial Network: Setting up a platform for data sharing that can be accessed not only by the companies on the BIZ but also by other BIZs and possibly also educational institutions can greatly improve the networking capacity and increase the efficiency with which problems are solved.
- Techno-scientific Knowledge: Above explained network will bring an influx of information from sources other than the BIZ, which might give rise to ideas and innovations that would not have been found by sticking to the companies on Minervum.
- Culture: The idea of creating a small group to test solutions for the entire park will ensure that everyone will at one point get the same product, once said product is proven to be more efficient than the current practice. Because everyone gets the same product the social cohesion of the business park can greatly improve.

Frictions

- Policy: 3B-O is focused on collaborative management so they are not familiar with having different groups treated differently. The way they would market this concept is to set up pilot programs outside of the actual BIZ before trying to take the results into consideration for the BIZ itself.
- Markets: Because the BIZ Breda-Oost is one of the first BIZs, they are a bit further along in their plans to reach their sustainable goals than other similar BIZs. This means that in the short term having an open platform will not be entirely beneficial to them but more for

other BIZs, only in the long run will this cooperation get better as other BIZs manage to catch up to Breda-Oost.
- Culture: All companies located on the Minervum business area are together in the BIZ thereby form one unit. However, by creating a smaller group within there may be a gap which results in discontent. Furthermore, because of the established business culture, once the pilot program does not come with solutions, other companies might be hesitant to continue funding it as they will not be getting any benefit from it.

An ecologically sustainable business park

For the third option to create a more sustainable we will look for opportunities to make the business park area as ecologically friendly as possible for the local environment. The main goal for this plan would be to create a nice and productive working environment, to be an example for other areas and above all to improve to local nature.

Water treatment

According to the Dutch meteorological institute, heavy rainfalls will occur more frequently, while also the periods of drought will become more intense and longer (KNMI, n.d.-b.; KNMI, n.d.-a). With heavy rain, after a dry period, the fertile top layer soil is more likely to erode and water will not be absorbed by the soil. Resulting in a dryer and infertile soil which is less suitable for plants to grow on (Li & Fang, 2016). Another problem with heavy rain is that all water is immediately going to the sewerage system, which can not handle the peaks which causes floated areas. Therefore, a balanced water system has two advantages. Firstly, a more fertile and irrigated soil is available for nice plants without having to irrigate it during summer times. Secondly, since the peaks of water are reduced, no expensive changes to the sewerage systems have to be made in the near future.

There are special solutions to capture water and let it sink into the soil. In different areas in Utrecht, there are several projects on capturing water in urban environments. The newly build district Leidsche Rijn has special floating area's, called a wadi. Helping the water flow throughout the city (Hoogheemraadschap De Stichtse Rijnlanden, n.d.). The same principles of a floating area's are also implemented on smaller scales, between roads, parking places and city parks (Gemeente Utrecht, n.d.). Even the roofs of buildings could help reduce the peak of rain (Debaere, 2020).

Green spaces

There are dozens of scientific studies done on the benefits of nature and green environment on human health. Nearly 40 years of studies tell us how (Urban Forestry/Urban Greening Research, n.d.). The website contains hundreds of studies on different themes, such as mental health & Functioning, Social Strengths, Work and Learning, Place Attachment and Meaning, Crime and Safety, Reduced Risks. The positive benefits cannot be denied, and it would, therefore, be unfortunate not to encourage green environments. Appendix F contains 6 of the arguments supporting these research themes. Following the interview (J. Koertshuis, personal communication, March 26, 2020), the main problem is that the initiative to engage in sustainability is not directly coming from the companies. The latter argument (about the Place Attachment and Meaning, Appendix F) shows how green spaces on the area might encourage the companies to engage in it, for at least environmental purposes.

Air quality

The effect of a green business area on the national CO2 emissions will be minimal. However, it would have a significant influence on local air quality. Trees reduce the number of toxic gasses such as Ozone and Nitrogen dioxide as well as reducing the number of small particulates in the air. Better air quality has a positive effect on human health, worth billions of dollars in the U.S. in 2010 (Nowak, Hirabayashi, Bodine, & Greenfield, 2014). As an additional advantage, trees lower the air

temperature making the environment more enjoyable on hot days and reduces the need for air conditioning (Nowak & Heisler, 2010).

Biodiversity

Green spaces have the opportunity to give back the benefit to nature, which the urbanization took away. This comes down to the biodiversity of the area. 3-BO is located at Minervum, which site is surrounded by multiple lawns and agricultural land. These neat lawns and uniform pieces of land do not encourage biodiversity. This is the chance for 3-BO to turn their pieces of lawns and rooftops into flourishing spots for essential insects.

- A study of Wageningen University on business sites shows these business areas can enhance endangered butterfly populations (Robbert, P.H. 2011). The focus here was on potentially, vacant lots, lawns and green roofs at business sites, which could offer habitat patches for these butterflies.
- Bees are extremely important for agriculture, where approximately 70% of our food is pollinated by bees (Rooij, S. n.d.). However, the bees are dramatically decreasing, especially the wild bees with a decrease of about 80% in the period of 1989-2014 (Vogel, 2017). The habitat of the bees depends on what the landscape gives them for food, shelter and building materials.

It is important to note that the improvement of biodiversity is not only done with planting flowers. It depends on the surrounding areas, and what kind of biodiversity is flourishing there. 3B-O can take the initiative to start the encouragement of the biodiversity for the area of Minervum with the municipality of Breda. Breda already places a high value on ecological maintenance (of bees) (Biodiversiteit in Breda, 2016).

Architecture

Greenery can also be implemented in and on existing buildings, on for example rooftops. Examples of initiatives can be found on the Zuidas in Amsterdam, many rooftop parks are created on already present buildings (Amsterdam Zuidas, 2018; Rooftop Revolution, 2018). For future building project on the terrain, a BREEAM assessment could be considered, the world's leading sustainability assessment method for master-planning projects, infrastructure and built assets (BRE, n.d.).

Tools

Appendix F shows the Osterwalder Canvas, the Business Model Connect and the Ecosystem Pie Model. For the implementation and know-how of water treatment and greenery, outsourcing needs to take place. The municipality of Breda can play a big role in this, for both subsidy fees as for the planning. The know-how could also be done in collaboration with experts on the field of greenery planning and architecture (Wageningen University, for instance). 3-BO serves therefore as mediator and initiative taker. It is important to note that for the stimulation of the biodiversity, the surrounding area (farmers, landowners) are also stakeholders and may also be consulted for a financial contribution.

The ecosystem pie model, see appendix F for more details, is not very different from the initial model. Although the value captured in this model is difficult to measure. Most value is created by mentally more positive people. In addition, there are some concrete values like the fact that more expensive future investments are in many cases not needed anymore. Only, because it is on a long term scale and the municipality is responsible for the terrain it is questionable if the companies see the benefits, resulting in a high-risk factor.

All the ideas proposed in this solution found their inspiration from the business models of Brainport Industries Campus and Park20|20. Both these parks have enhanced water management systems. Park20|20, moreover, influenced the ideas for green spaces and the encouragement of biodiversity.

Linking back to the company's context, there are to some degree fits and frictions with the current socio-technical regime. Below, these fits and frictions are listed.

Fits

- Within the current BIZ, there are already initiatives for more sustainability and green spaces (Jeppe Koertshuis, 2020) (Culture and symbolic meaning), so this ecological plan might have positive support.
- Sustainability and biodiversity are highly valued by the municipality (Biodiversiteit in Breda, 2016), so the approval of the city council (Policy and Regulation) might become more convenient.
- According to Jeppe Koertshuis, the BIZ of Minervum is the forerunner when it comes to sustainability. The implementation of this ecological stimulating approach is therefore unique for their market (so not considered business parks like Park20|20), will create a good image and is an example for other BIZs.

Frictions

- Considering the infrastructure, it might be hard to implement the green spaces nearby every cluster of companies, since these are divided into several smaller areas.
- Additional, because of the policy that there should be 2/3 support of the voting companies, it could be a challenge to get to this amount of support when the green spaces are not directly visible/nearby some clusters of the companies.
- Because most of the companies are still mainly focussed on economic profit (Jeppe Koertshuis, 2020), environmental profit may be considered as something less valuable.

Selected business model: Monitoring

The monitoring business model is selected because it is innovative, scalable and does not require a lot of fundamental changes in buildings. The practical feasibility is highest in this case either.

3 fits with the current regime

- Policy: There is a governmental focus on sustainability which will probably only grow in the coming years. Companies which want to invest in sustainability can profit from allowances for solar panels e.g. which makes it easier to adapt to the new business model.
- Technology: 3B-O already has a focus on technology and smart cities. The monitoring system can be part of creating such a smart city. By dividing the generated electricity via a smart grid for example.
- Industrial networks: It is possible to make a connection with other business parks, which is already a goal of 3-BO, but not reached yet. This monitoring system is easy implementable at other business parks as well, which increases the impact of the system and corresponding ranking.

3 frictions with the current regime

- Policy: 2 out of 3 voters needs to agree with the plans, this makes it harder to implement sustainability measures, especially if it will cost the companies money.
- Culture: For a lot of companies at the business park sustainability is only an expensive feature, the culture of the businesses is focused more on profit maximization instead of taking the environment into account as well.
- Infrastructure: Most of the buildings at the business park are about 20 years old, which means it is likely that renovation will take place in the coming years. The sustainability standards were way lower when these buildings were built, which causes high costs to make it energy-efficient or energy neutral. The roofs of most of the buildings lack structural

strength to hold the weight of solar panels for example. And if that is possible, there might be a problem that the electricity network is not able to use all the generated power.

The first friction can be dealt with by involving another company to monitor the data. This company can select a small group of companies who are willing to participate in this idea. If this pilot works out well it would be easier for 3-BO to implement the idea over the other companies as well.

Changing the culture of the businesses can be very hard and needs time. The new business model can help in changing this culture, by setting up the competition. Even the companies who are not willing to focus on sustainability are stimulated to higher their position at the ranking list. Hopefully, over time they will do it with intrinsic motivation as well.

Making the buildings at the business park sustainable will inevitable be a costly operation. Governmental subsidies can help in making this more achievable. The lack of capacity of the energy network is something the network operator should invest in, this especially needs time before all the sustainability energy can be used in the way it is intended.

Internal production constraints

For moving from 3-BO's current business model to the new designed one, the business operations of 3-BO should be considered. Their current internal production(e.g. in terms of current resources, partners or skills) is to some aspect constraint so that it might be difficult the make the switch.

- For the new business model, 3-BO needs to make sure all the needed data of the companies is retrieved and analysed. This is with the current business model not possible because they lack the skills and permission to retrieve it or analyse it. This could be solved by hiring data-analysts, or by outsourcing it through forming a partnership.
- As said, the motivation for sustainability should come from the companies themselves. This motivation is only possible when the monitoring proves its sustainable/economic benefit. It is with the current regulations (2/3 voters should support the idea) hard to implement. However, this could be solved by setting up a pilot for a few companies voluntarily. Out of their data, monitor possibilities will be discovered and worked out. From there, other companies can be persuaded.
- Lastly, also the know-how of monitoring (technology/equipment/application) is not in 3-BO's current skill set. This could also be solved by outsourcing or hiring a company in-house.

C. Validation

To validate the proposed business model three different sources have been used: a student group from the university of applied sciences at Breda, 3BO's project leader Jeppe Koertshuis and lastly literature. All their approaches and comments shall be touched upon shortly.

On Monday, March 30th a double-sided interview took place with the student group from Breda. In this interview, the researchers presented the proposed business model and asked for feedback and critique. In return, the feedback was given back on their appointment. They liked the approach of creating differences between competitors. By standing higher on the ranking one gives himself an edge on competitors who end lower on this ranking. On the contrary, they observantly mentioned that the startup phase of this monitoring system could show problems. The system thrives on active competitiveness and critical media attention, but this is not a likely scenario when the system is launched. What they mentioned might help however is to look forward towards upcoming regional, national and European policies. An aspect that might convince companies to actively take part in the monitoring system is that they will have taken a few steps in advance and benefit from them which they would have to take anyway later.

During the process of creating a new green business model for the business area Minervum, there has been frequent contact with the project leader Jeppe Koertshuis. He has given positive feedback on the three new business models but was most enthusiastic about monitoring. He also felt that monitoring and starting with a small group go hand in hand. In this way, insight can be obtained through monitoring and people will become convinced, after which the monitoring can be scaled up. He was also convinced that there would be hardly any problems with obtaining information from energy companies.

Literature only strengthens this possible weakness. Literature backs up the different aspects on which the monitoring idea thrives as previously mentioned in integration such as psychological theories as to the sense of conformity, normative influences and descriptive norms. Once again however is the missing aspect of starting the concept. Once the concept is accepted and normalised within the business park the different companies and their healthy rivalry will keep the idea effective, but if the majority fails to catch on with this new system the psychological theories will actually work against the concept.

To tackle the problem of the initial startup future research has to be done on one of the other proposed ideas: the "test" committee. By first starting with an enthusiastic and motivated group and showing its success, the rest might follow. This is however still a theory and needs further backup or execution to show that this hypothesis is true.

Additionally, it was assumed that the concept is technologically and financially viable. The hypothesis stands that the current technology is able to calculate CO2 emissions based on sensors, data on aspects as shipping and smart algorithms, whilst staying in a budget that companies are willing to spend. No focus was put on finding out the details but is necessary if the concept would be realised.

Thirdly, it is assumed that the data from the companies can be received. It has not been taken into account if companies would have a problem with the fact that their data would be shared by other parties and if so, whether they are protected by law. Research into the law and people's willingness has yet to be done to test this hypothesis.

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Appendices

A. Interview minutes, Jeppe Koertshuis 12-03-2020
B. Interview minutes, Jeppe Koertshuis 26-03-2020
C. Appendices of 3. Current business model
D. Appendices of 4. Regime
E. Appendices of 5. A. Opportunity spotting
F. Appendices of 5. B. Integration
G. Appendices of 5. C. Validation

A. Interview minutes, Jeppe Koertshuis 12-03-2020

Registrar 1

3B-O is an interest group with the goal to be the most sustainable, most safe and most smart business area. The company has made a BIZ for the business area Minervum as there was an increasing interest in the security of the area. A BIZ is a plan for an area and ends by right after five years. Before the BIZ can be implemented, half of the companies (that vote) must vote in favour. If the plan has been approved, the companies will pay a fee depending on their WOZ-value. The rest of the implementation of the BIZ will be made possible by subsidies from the government and from Europe. Now, after almost five years, a new BIZ has to be made. In this new BIZ, other subjects have to be implemented due to their increasing importance. Meaning subjects such as sustainability, smart city and security 2.0 need to be included in the new BIZ. Examples of sustainability are wind turbines and solar panels. Examples of smart cities are smart lighting and self-driving cars. Lastly, an example of security 2.0 is that fewer security men and more security cameras are implemented.

The question that arises is: 'How can sustainability be tackled as a core and how do you get companies to work on it, outside financial pressure or pressure from the government?'. Therefore, a solid business model needs to be made that is suitable for the large variation of businesses in the area. Intrinsic motivation and transparency are key to achieve something. Therefore these two aspects will be taken into account by finding an answer to the question.

Registrar 2

Business model. Belangenvereniging. Geen klanten. 5 jaars plan bij een meerderheid gaat het door. Staat vast wordt niet meer aan het veranderen. Gegroeid uit de behoefte aan beveiliging (2/3 budget). Securitas. Alles opgebracht door het bedrijventerrein. Percentage is bepaald aan WOZ waarde (gebouw waarde/waarde terrein). Vanuit rechtswege stopt t na 5 jaar. Voor verlenging moet er opnieuw gestemd worden. Trend verandert (beveiliging 2.0, duurzaamheid) Bedrijf gaat alleen over fysieke zaken. 3 zaken moeten aangepakt worden: Sustainability, smart city, security 2.0. Komt vanuit bedrijven en overheid.

De vraag, hoe kunnen we duurzaamheid als core aan te pakken?

Doel van 3B0: Meest duurzame, veilige bedrijventerrein.

Lopende trajecten: Windmolen, zonnepanelen veld, zonnepanelen op daken. Aantal bedrijven eigen initiatief.

Hoe krijg je bedrijven aan de bak, buiten financiële of druk uit overheid?

Ze kennen elkaar, maar geen tijd voor cohesie. Geen nieuws is goed nieuws. De stemming telt, niet opdagen is eigen schuld.

Zij grootste BIZ. Die stemming moet er doorheen komen. Inkomsten komen uit zowel overheid als business.

Zelf aan de slag qua vergelijking met andere terreinen.

Staan aan het begin van de duurzame stap. www.breda-energie.nl De mensen die willen daar hoef je niks mee en wordt weinig mee gedaan.

Intrinsieke motivatie

Duurzaamheid: CO2 reduceren. Nu vooral energie (elektriciteit)

Geld is geen probleem?

Directeuren/ Grootaandeelhouders DGA's Bredase ondernemers kijken naar elkaar. Klein kijkt naar klein.

Transparantie is goed. Verder gaan op motiveren.

Smart city: slim meetsysteem die helpt met beslissingen zoals verlichting. Of onderhoud aan wegen niet periodiek maar via automatisch tellen auto's. Infrastructuur verbeteren, belichting, big data storage, applicaties.

Beveiliging: Slimmer en effectiever maken via technologie.

B. Interview minutes, Jeppe Koertshuis 26-03-2020

Andere terreinen in Breda: Hazeldonk & Steenakker

→ Breda-Oost 2050

Bregje/Levi: Geen samenwerking met andere bedrijventerreinen. Bij 3BO houden. Elke bedrijventerrein heeft zijn eigen structuur en daardoor is samenwerking lastig. Houd het bij 3BO en vergelijk het met andere succesvolle biz parken. Pilot groepen starten als inspiratie is een goed idee maar gebeurt al deels, dus meenemen maar niet heel bijzonder.

Stefan/Frans: De eerste stappen zijn hier al voor genomen. De vraag is vooral richting hoe ga je iedereen enthousiasmeren om met monitoren in te stemmen en mee te doen. Die stap is de grootste vraag en moeten we meer focus op leggen. En aanvullende ideeën over het hoe en wat te monitoren bedenken. Hoe maak je het leuk en zorg je ervoor dat iedereen meedoet? Je kan ook ergens aan werken met bedrijven zonder dat het in de BIZ staat.

Hoe dieper je in de productieketen gaat hoe simpeler het werk en hoe groter de kans op kinderarbeid of slechte werkomstandigheden maar de invloed vanuit een bedrijventerrein is minimaal.

Bodi/Victor: Groenvoorziening wordt geregeld door de gemeente. Groen voorziening is interessant maar vraag of er geld voor is. Al is er bij de entree wel extra groen geplaatst. Watervoorziening gebeurd al een beetje, maar de bedrijven niet enthousiast. Een transitie lijkt daarom moeilijk, moeilijker dan een nieuw park starten met deze waardes. Als je de voordelen op lange termijn aan kan tonen dan kan t wel doorslag geven. Laat de bedrijven/3BO inzien dat het wel een onderwerp is dat het voordelig is op lange termijn. Nederland begint dit ook langzaam op te pakken, dus vanuit dit perspectief is het wel interessant. Zodra er onderhoud komt, zou je groene plannen voor gebouwen meteen mee kunnen nemen. Wel grondiger uitzoeken wat er dan mogelijk is. Goede voorbeelden geeft inspiratie. Visie ontwikkelen, letterlijk vergroenen is daar een voorbeeld van.

Er kan ook onderzoeksbudget worden gegeven als het interessanter is voor de langere termijn.

Uiteindelijk: bulletpoints met de conclusies en als iets onduidelijk is verwijzen naar het verslag.

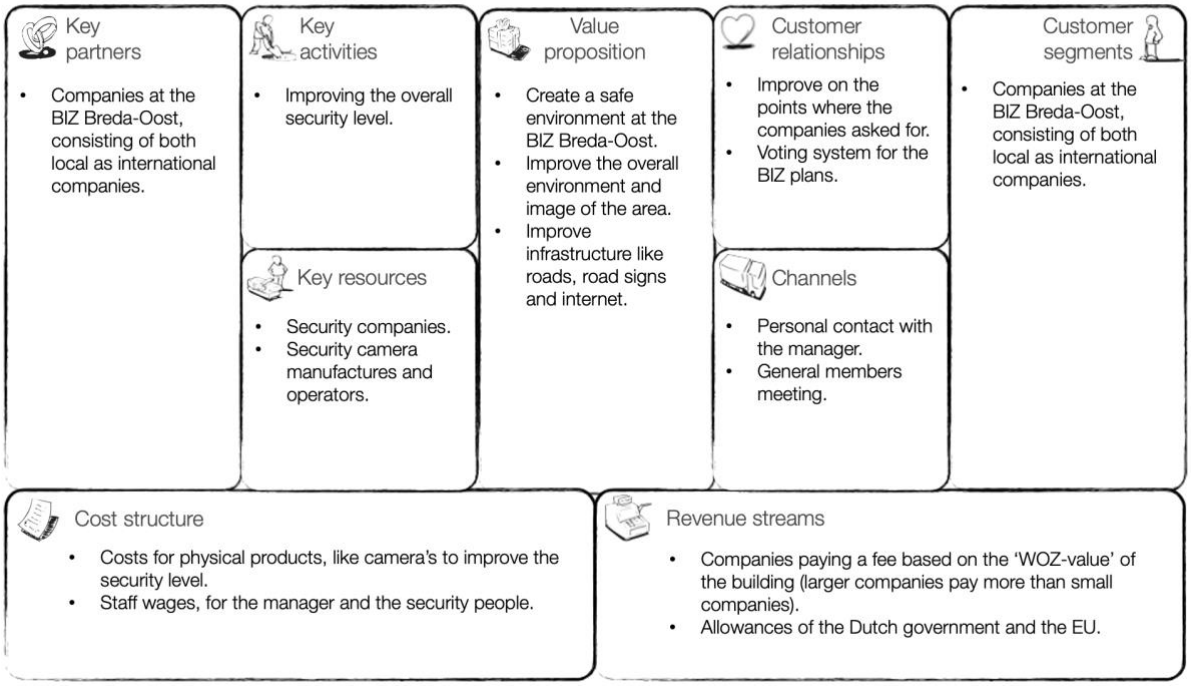
Afbakenen en structuur aangeven.

Met alle drie de ideeën verder gaan en dieper uitwerken. Net iets meer voorbeelden en diepgang zodat je houvast en proof of concept hebt.

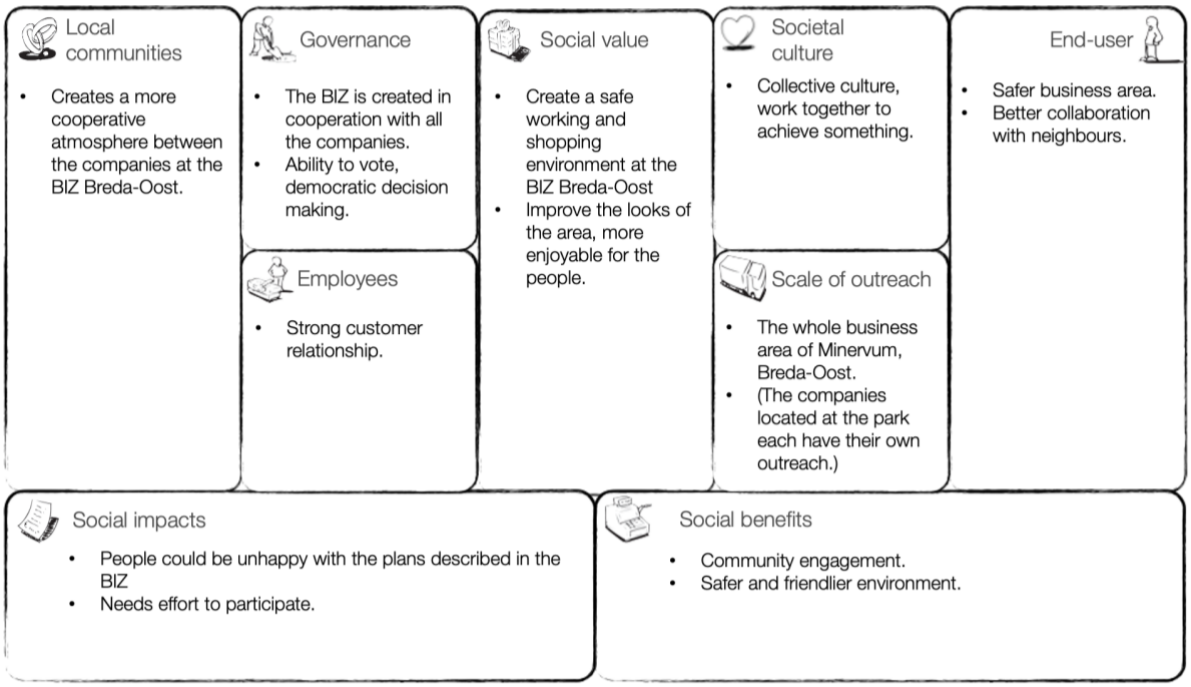
C. Appendices of 3. Current business model

The triple layer business model of 3B-O

3BO's Business Model (Economic)



3BO's Business Model (Social)



3BO's Business Model (Environmental)

Supplies and out-sourcing
- Production of security camera's and other safety equipment.
- Production of a windmill and solar panels.
- Water, energy and gas for processes.

Production
- A windmill will be placed. Also solar-panels need to be produced.
- Production of security camera's, etc.

Materials
- Various materials needed for the production.

Functional Value
- Easy supply for renewable energy.
- Collective use of products, systems and services.
  - Safety
  - Quality of the local area

End-of-life
- No products are sold by 3B-O so there is a minimal waste, only from the products installed by 3B-O.
- No recycling service for companies in the area.

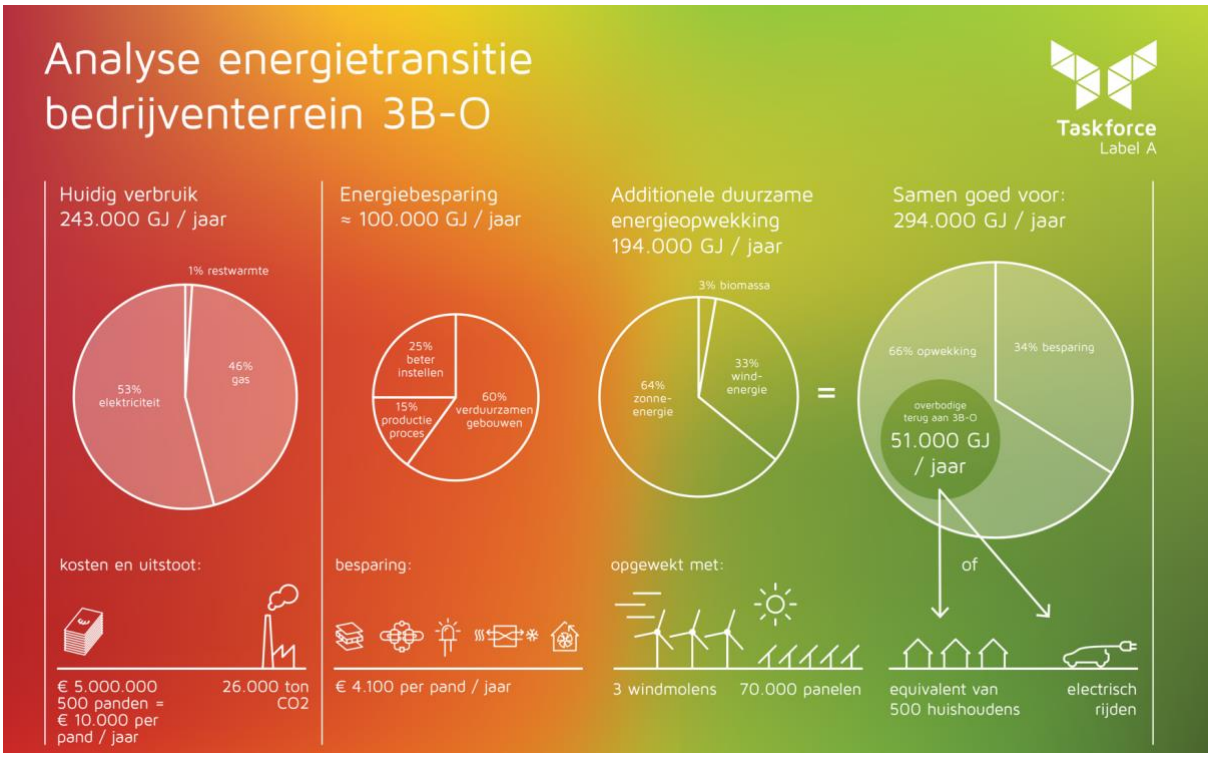
Distribution
- No products are distributed by 3B-O.
- No agreements for distribution of the companies in the area.

Use phase
- All collective products used have a smaller impact than when all companies separately buy a product or service, efficiency improvement.

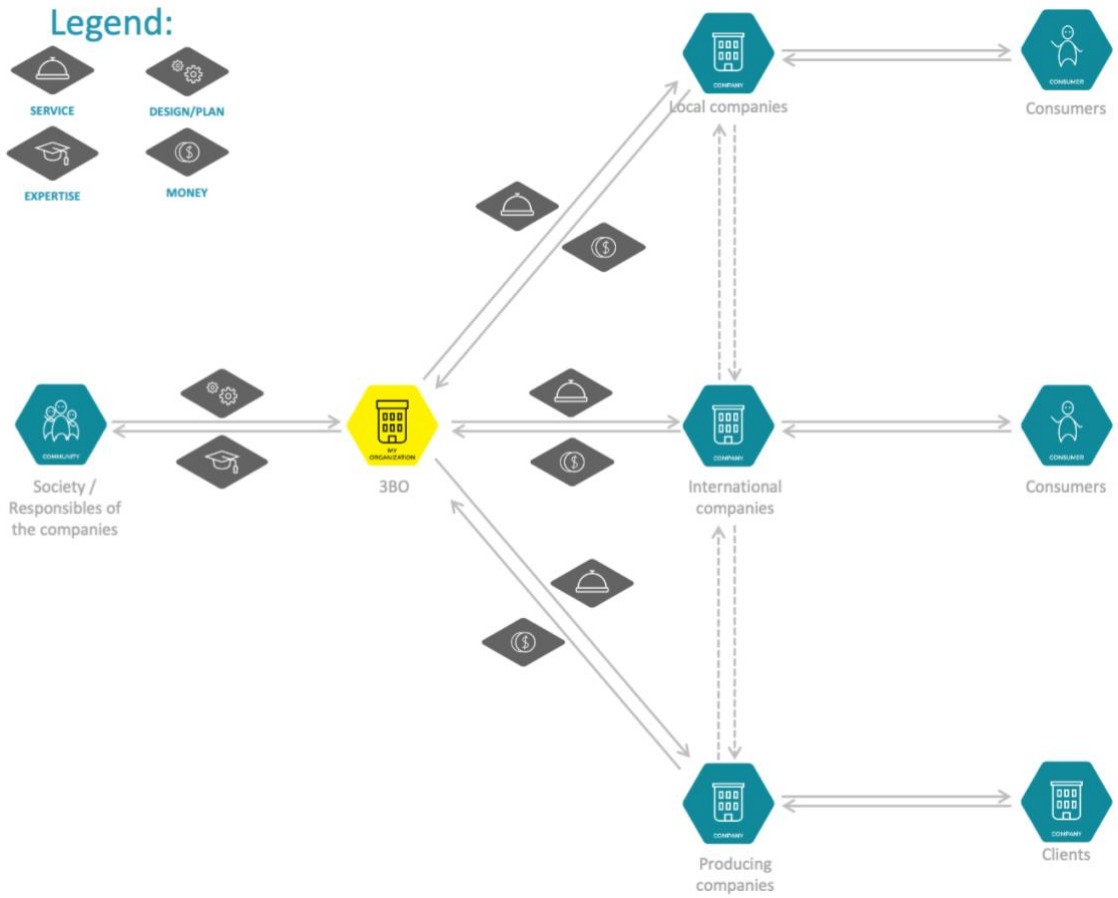
Environmental impacts
- Impact of all the products, systems and services operated by 3B-O.
- Lack of a recycling service has impact.

Environmental benefits
- Collective use of products minimizes the effect on environment.
- More companies use green energy.

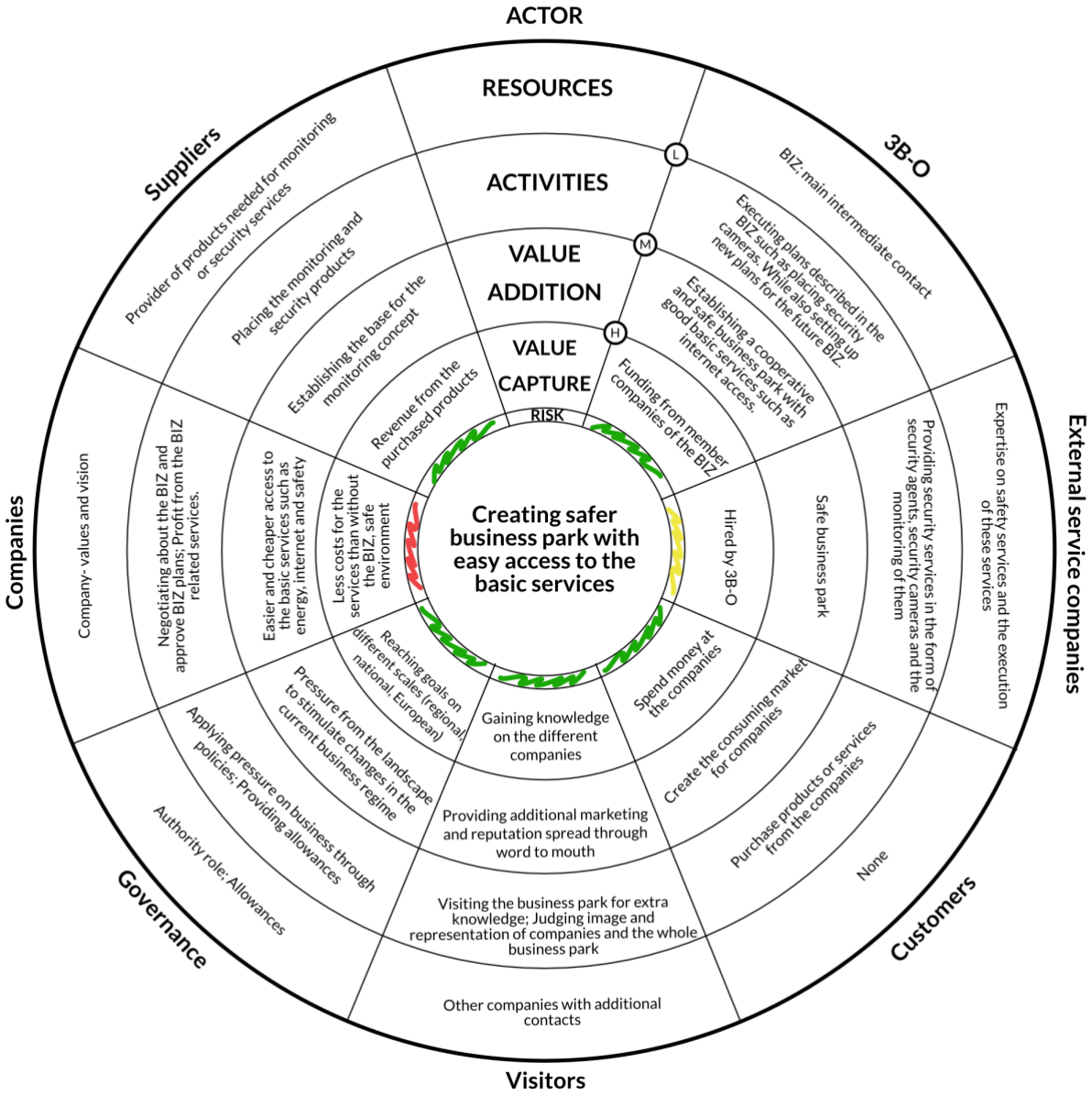
Analyses for energy transition business area 3B-O



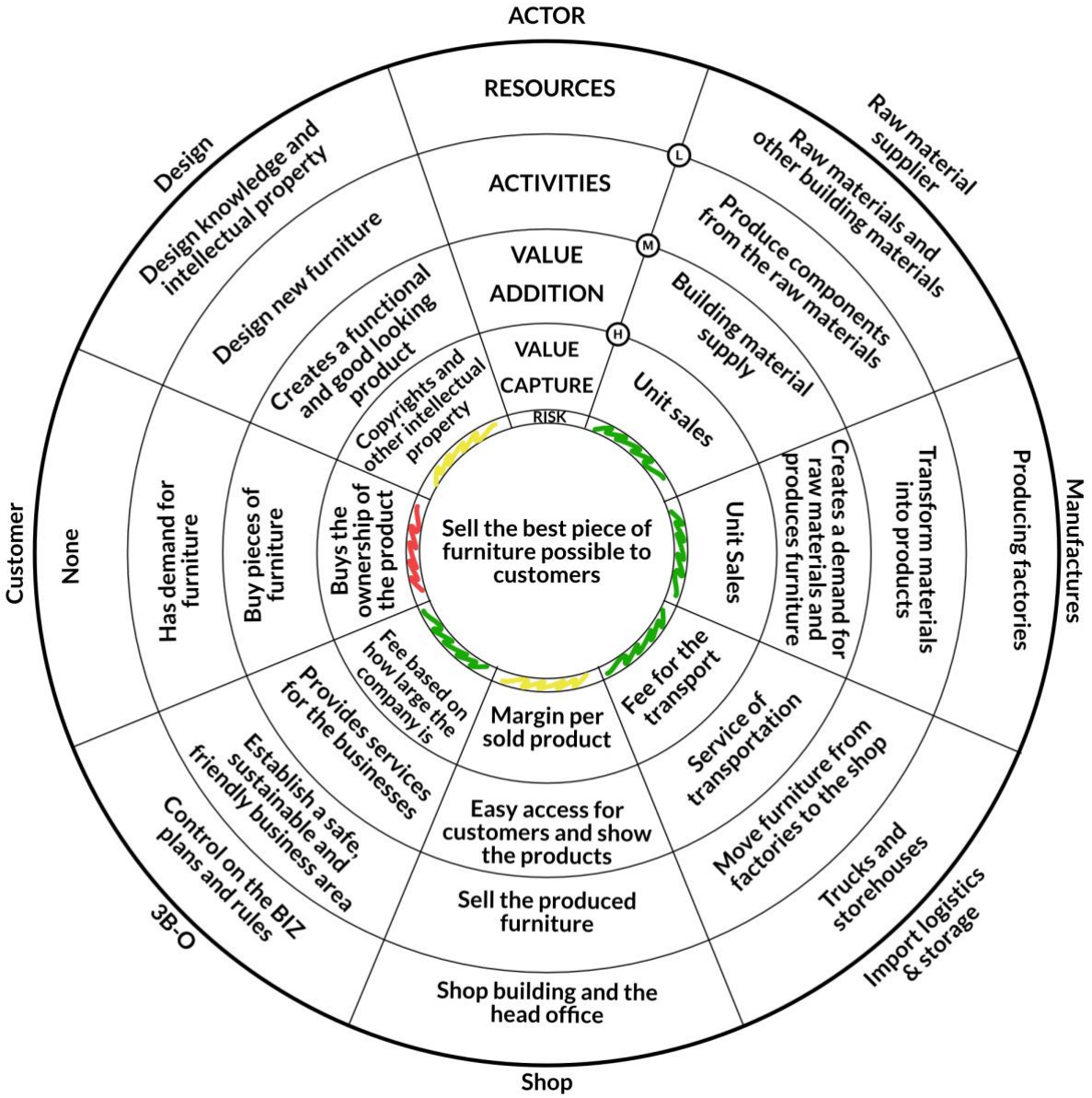
The business model connect diagram of 3B-O



The ecosystem pie model of 3B-O



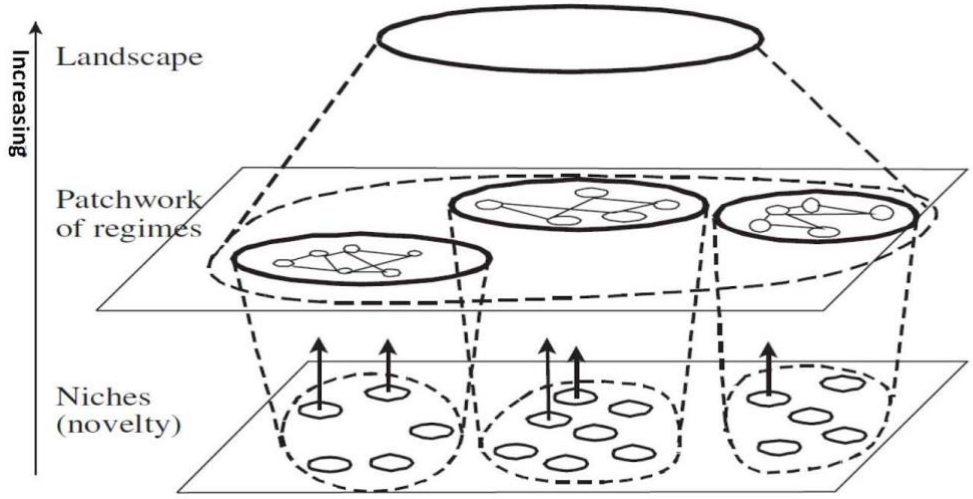
The ecosystem pie model of a furniture company located at the 3B-O area



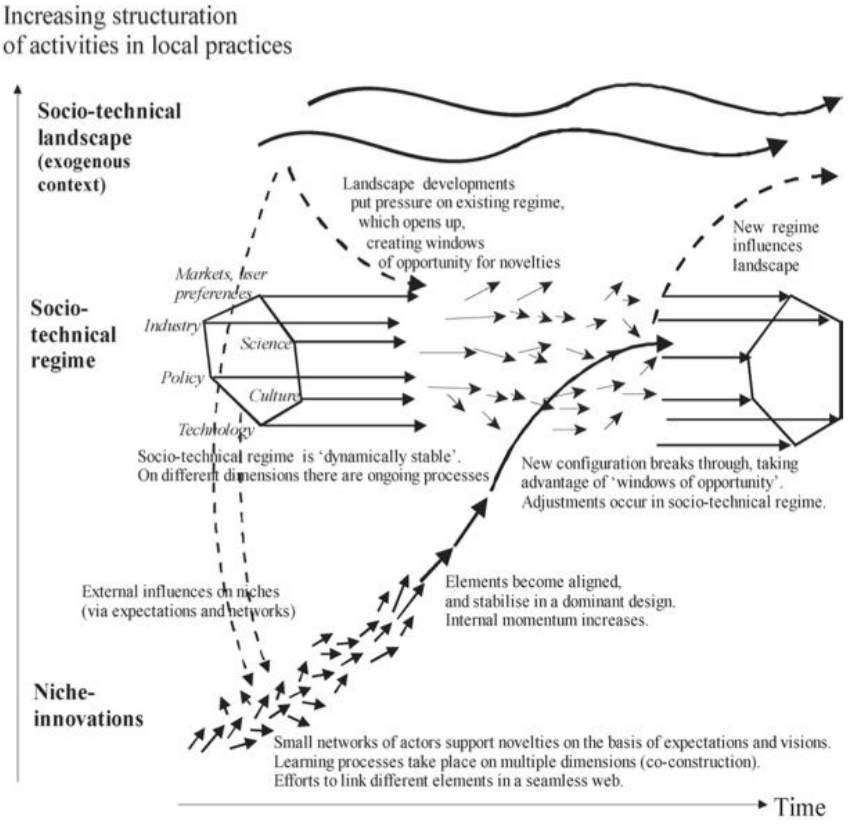
D. Appendices of 4. Regime

Two clarifying images of the Regime is influenced by the Landscape and the Niches

First image clearly shows the relationships of multiple regime networks that are part of a bigger Landscape. The regime networks are then influenced by single niche ideas.



The second image, clearly shows the process of breaking up or changing the regime by niche innovations over time.

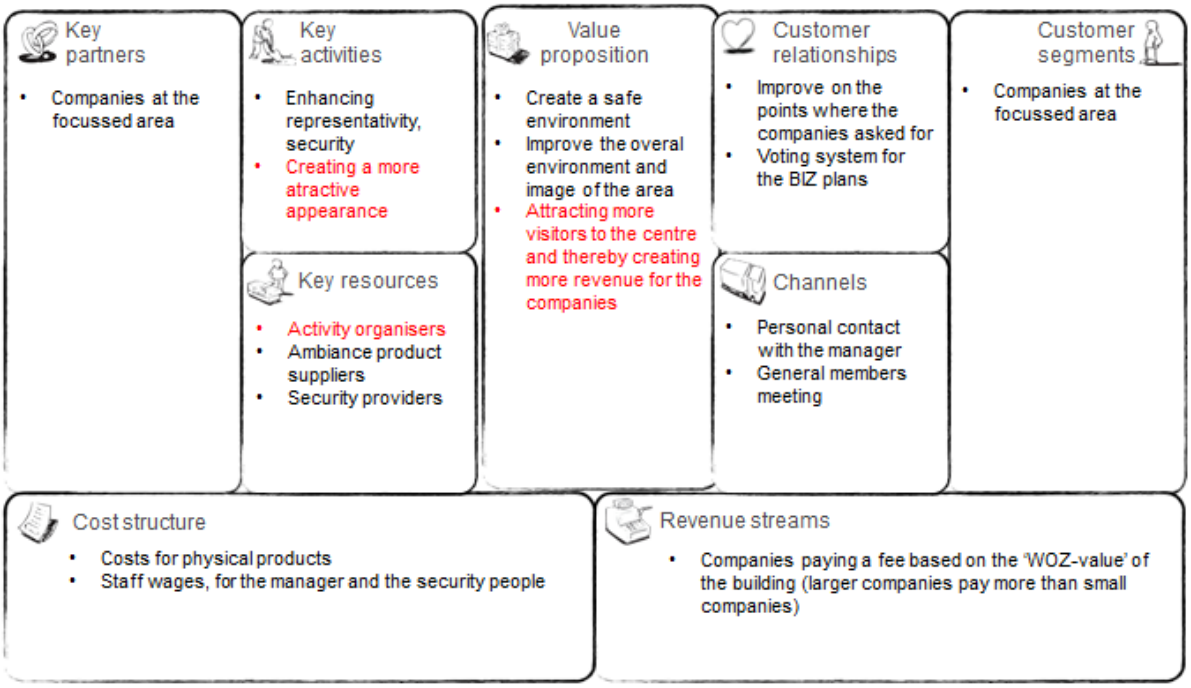


Source: Molins, M. (2015, April 17). Réseau social de la Fing: 1. Transitions, repères et éléments de définition. Retrieved 5 April 2020, from http://reseau.fing.org/pages/view/151413/1-transitions-reperes-et-elements-de-definition

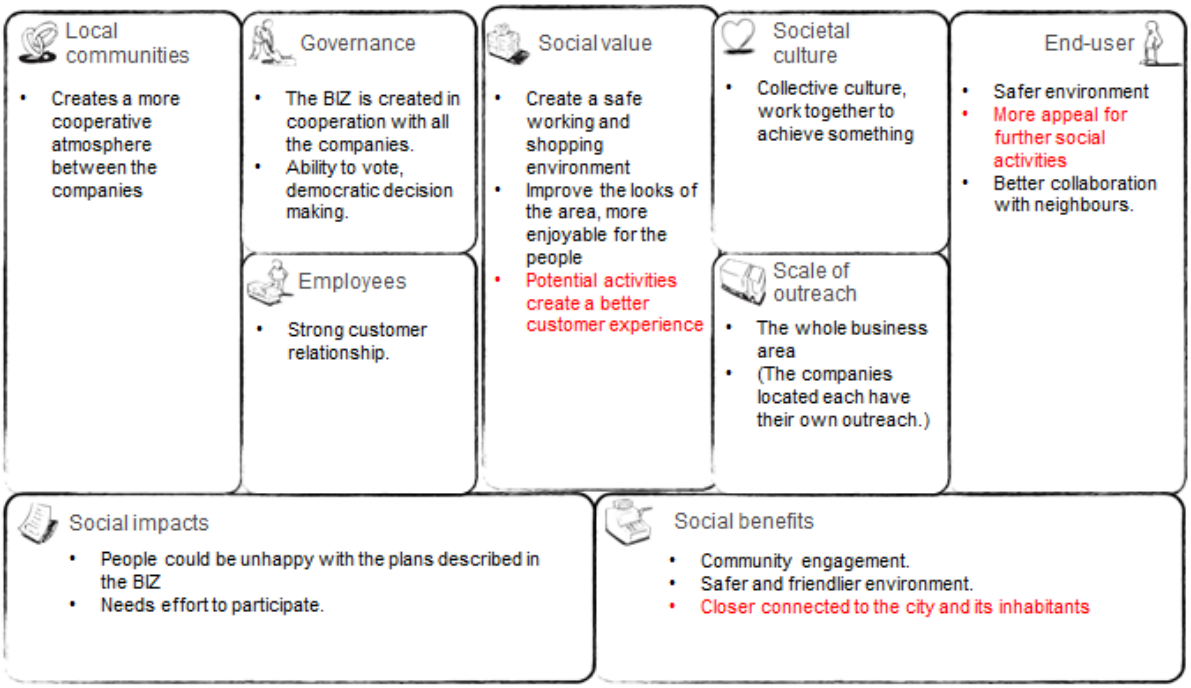
E. Appendices of 5. A. Opportunity spotting

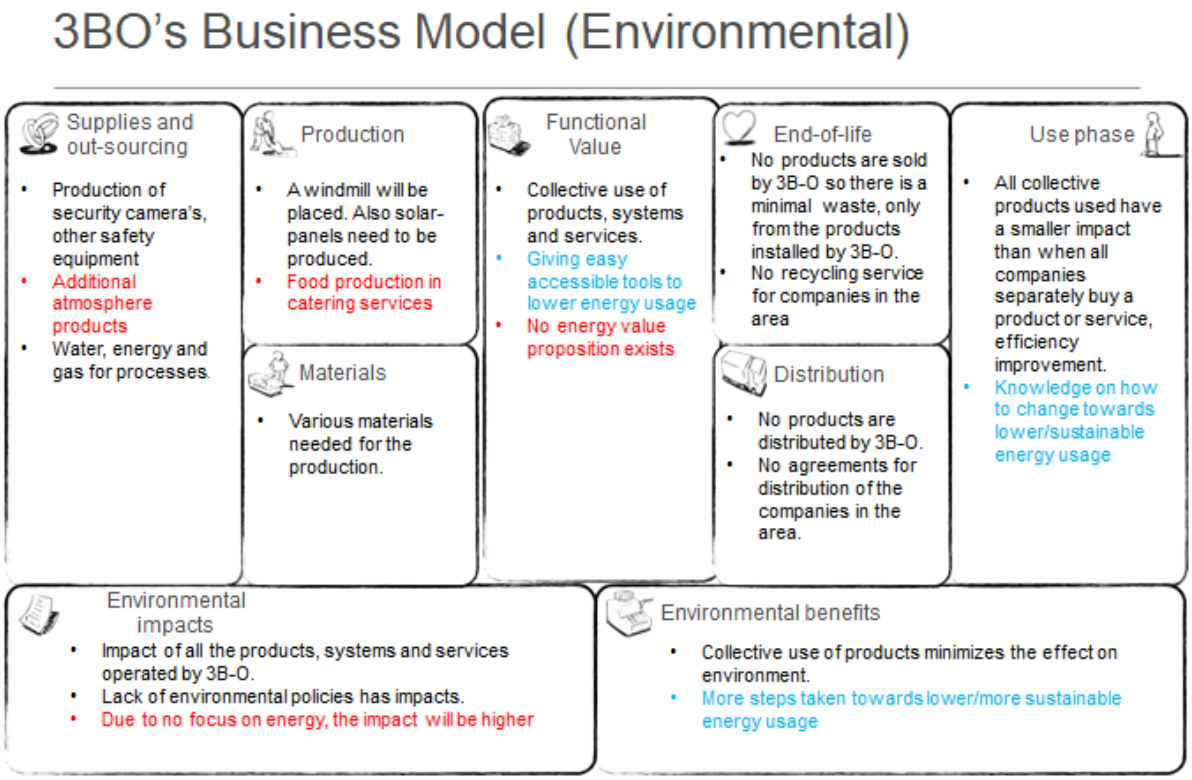
Economic and social Osterwalder BMC for the competitor analysis

3BO's Business Model



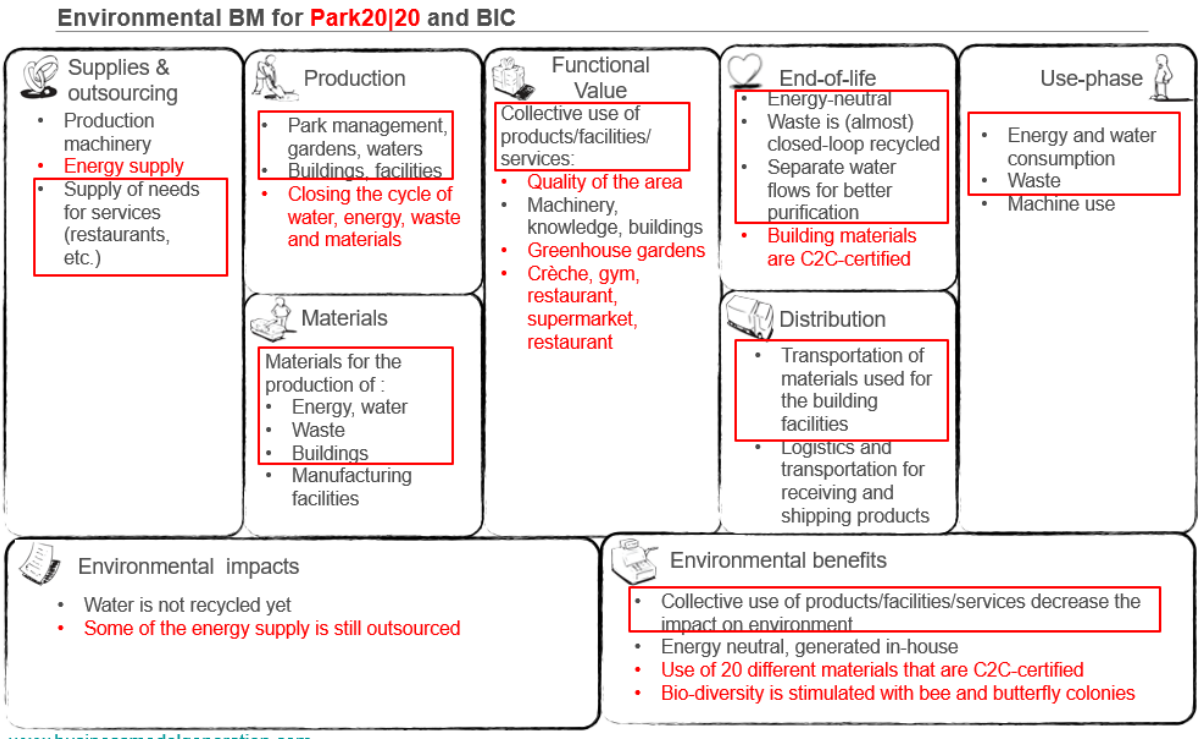
3BO's Business Model (Social)





Economic, social and environmental Osterwalder BMC of the different sector analysis

With Park20|20 in red, and Brainport Industries Campus in black. The text in red outlined, means the content also applies to Park20|20. See Appendix C to compare the Canvasses below.



Economic BM of Park20|20 and BIC

Key partners
- TU/e and other knowledge institutions
- Brainport Industries
- Municipality Eindhoven
- Government
- Companies on the campus
- VolkerWessels
- Reggeborgh Bedrijven Groep
- Delta Development Group
- Municipality Breda

Key Activities
- Innovation and education programs
- Facilitating the machines/services/ buildings
- Facilitating buildings and services
- Maintaining the park environment

Key Resources
- Manufacturing facilities
- Buildings
- Intellectual resources
- Human resources
- Brand

Value proposition
- Flexible, scalable and adaptable buildings
- Open environment for knowledge, innovation and manufacturing facilities
- A balanced full-service C2C-optimized work-life environment

Customer relationships
- Co-creation
- Communities
- Personal assistance

Channels
- Personal contact
- Website
- In-house

Customer segments
- TU/e and other knowledge institutions
- Brainport Industries
- Municipality Eindhoven
- Government
- Companies on the campus
- Companies in the area

Cost structure
- Costs for facilities and buildings
- Maintenance of the park
- Providing education and innovation programs

Revenue streams
- Pay-per-use of shared facilities, machines and services
- Licensing fee of the patented technology
- Renting of the workspaces
- Subsidy fees
- Investors
- Product leasing

Social BMC of Park20|20 and BIC

Local Community
- Create a more cooperative atmosphere between the stakeholders/ companies
- Benefit for the city and Brainport region

Governance
- Transparency and co-creation in decision-making
- Focus on and working with the companies in the area

Employees
- Programs for education, focussed on long term relationships
- The (well-being of the) employees are the focal point of the park

Social Value
- Improves the area for well-being of the employees and customers
- Create more balance in the work-live environment
- Focus on bringing the companies together to form and entity

Societal Culture
- Culture of cooperation and unity for shared values and beliefs
- Culture of responsibility through engagement with environment

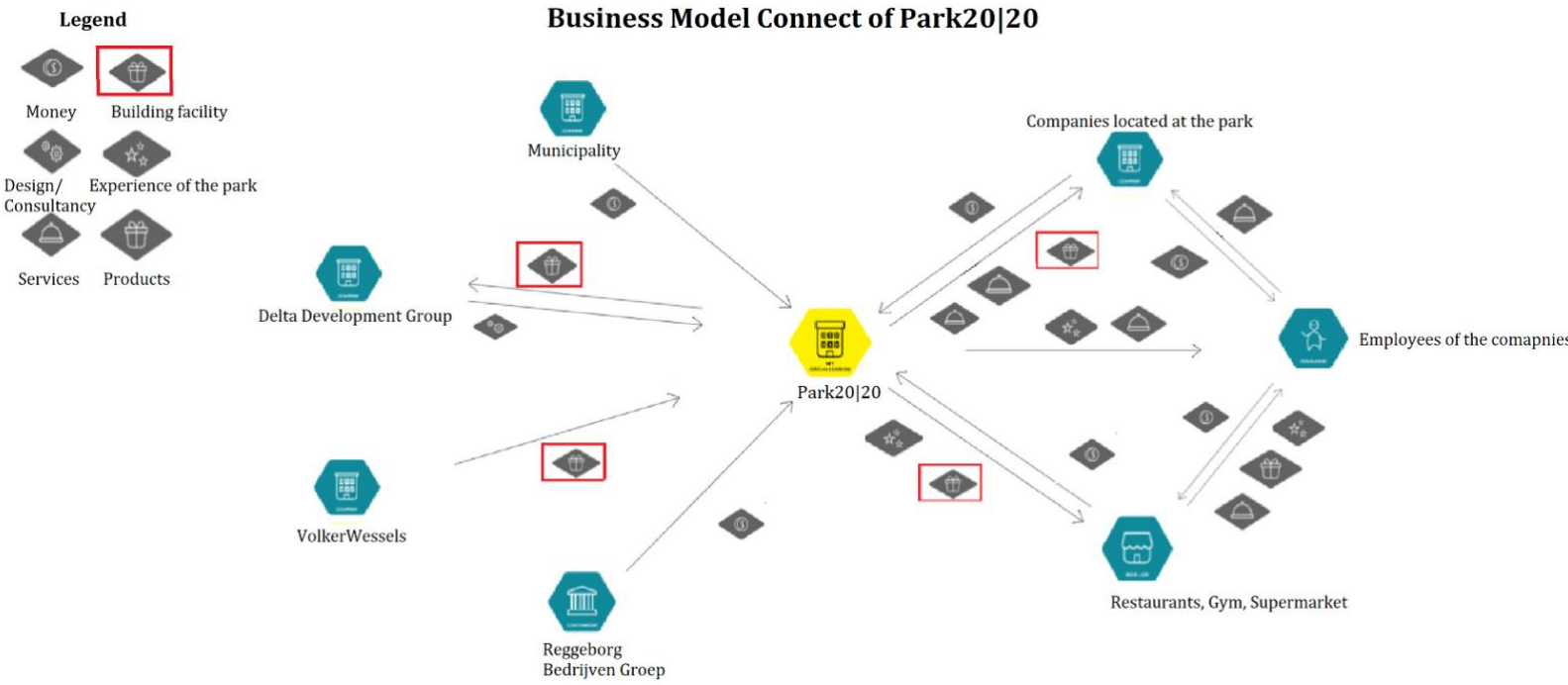
Scale of outreach
- Brainport region counts for almost quarter of Dutch exports
- Education in-house give rise to life-long relationships
- Focussed on the human well-being and their quality of life

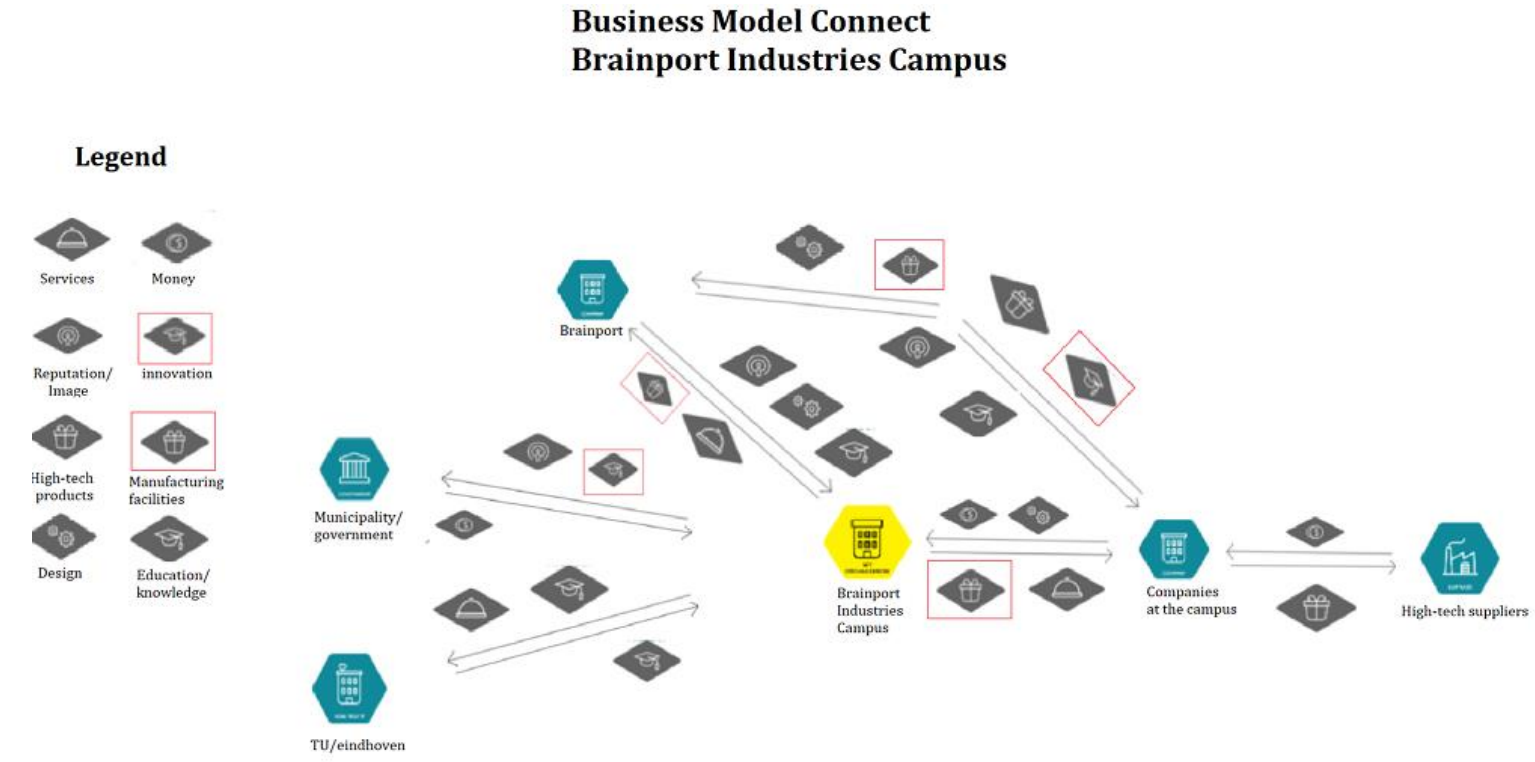
End-of-use
- Feeling more connected to nature/the direct environment
- More meaningful relationship with the stakeholders and the environment

Social Impact
- Not being able to own facilities or services
- Potential displacement of local services/facilities, like gym, restaurants etc.

Social Benefits
- Community engaging, improving the quality of life of the stakeholders
- Personal development of students/employees through training programs
- Environmental engaging, improving the quality of life of the stakeholders

Business Model Connect tools of Park 20|20 and the Brainport Industries Campus

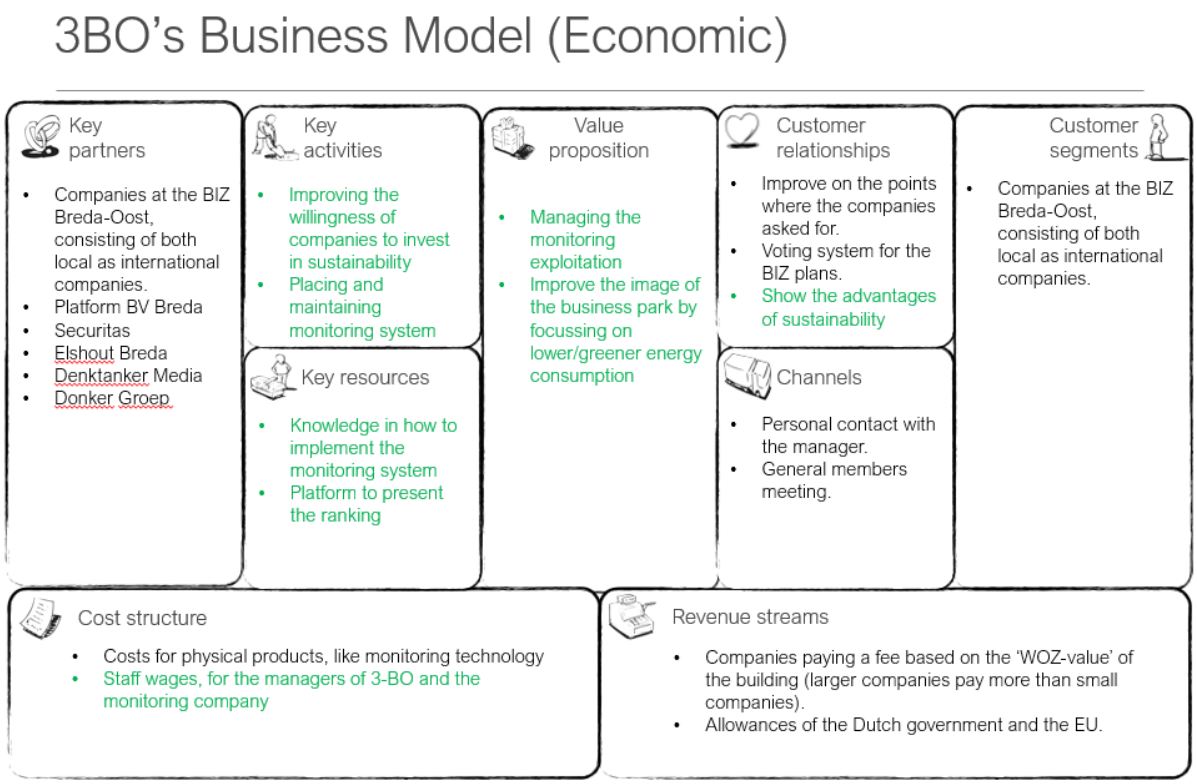


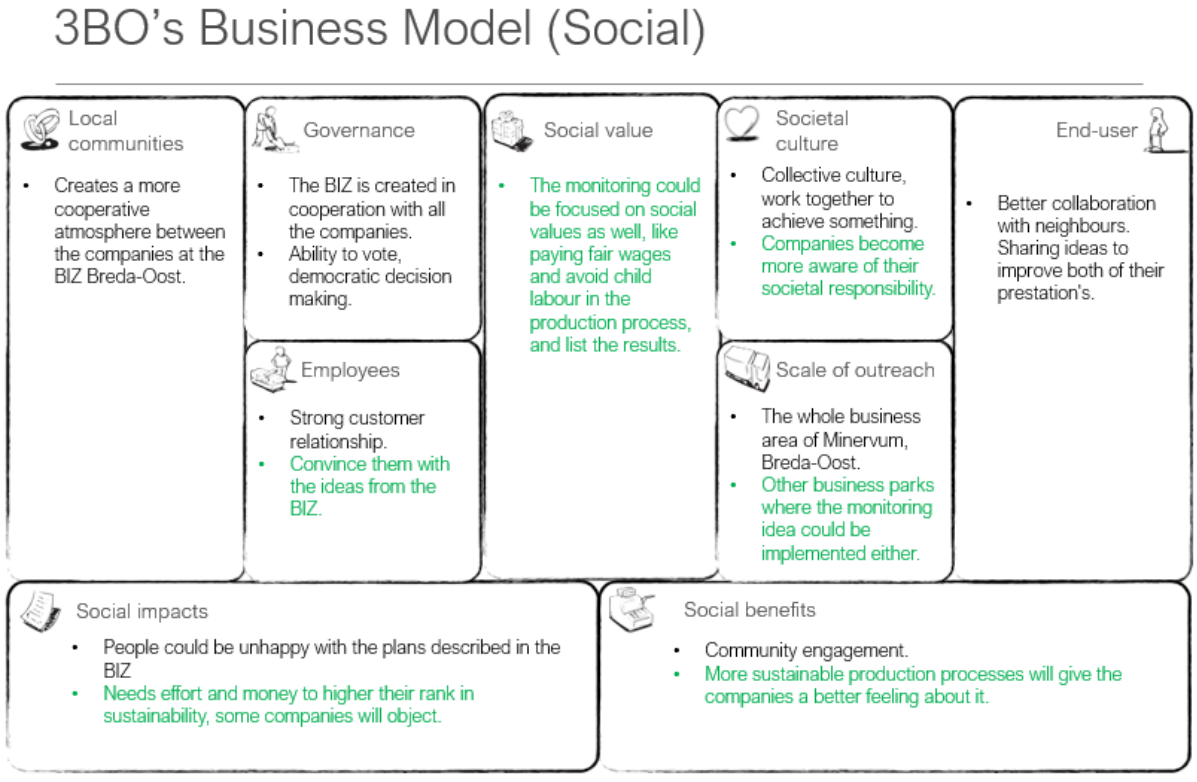


F. Appendices of 5. B. Integration

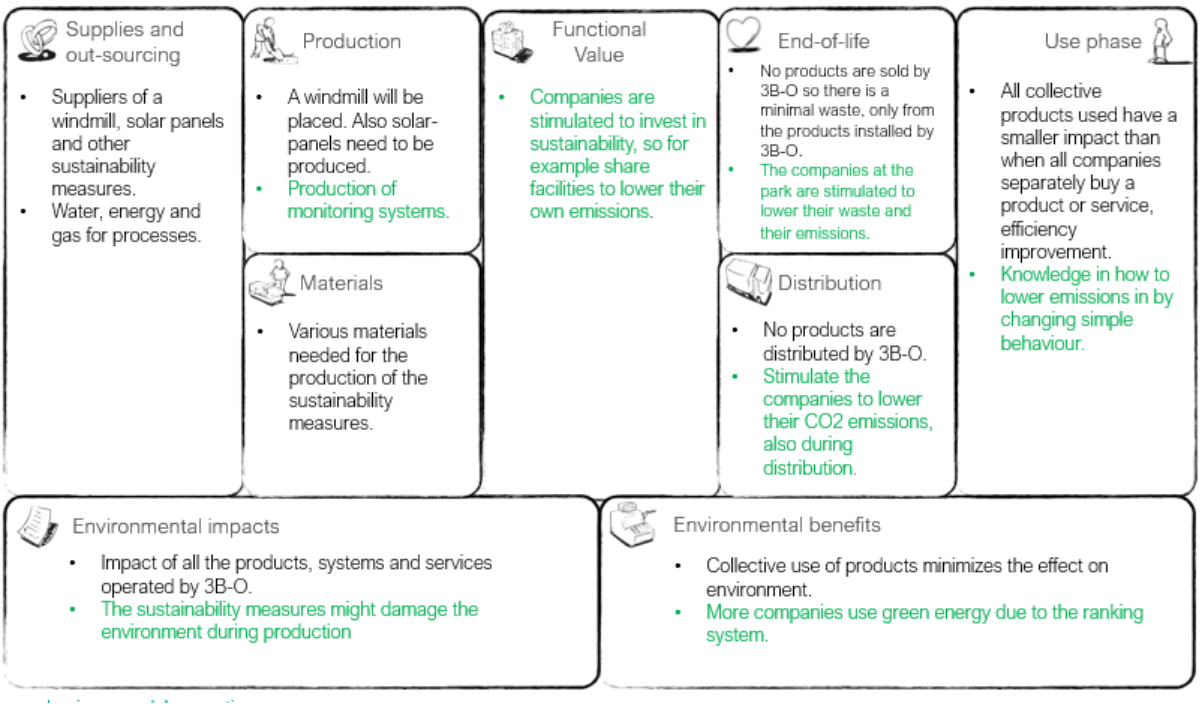
Monitoring

Triple layer Business Model Canvas





3BO's Business Model (Environmental)

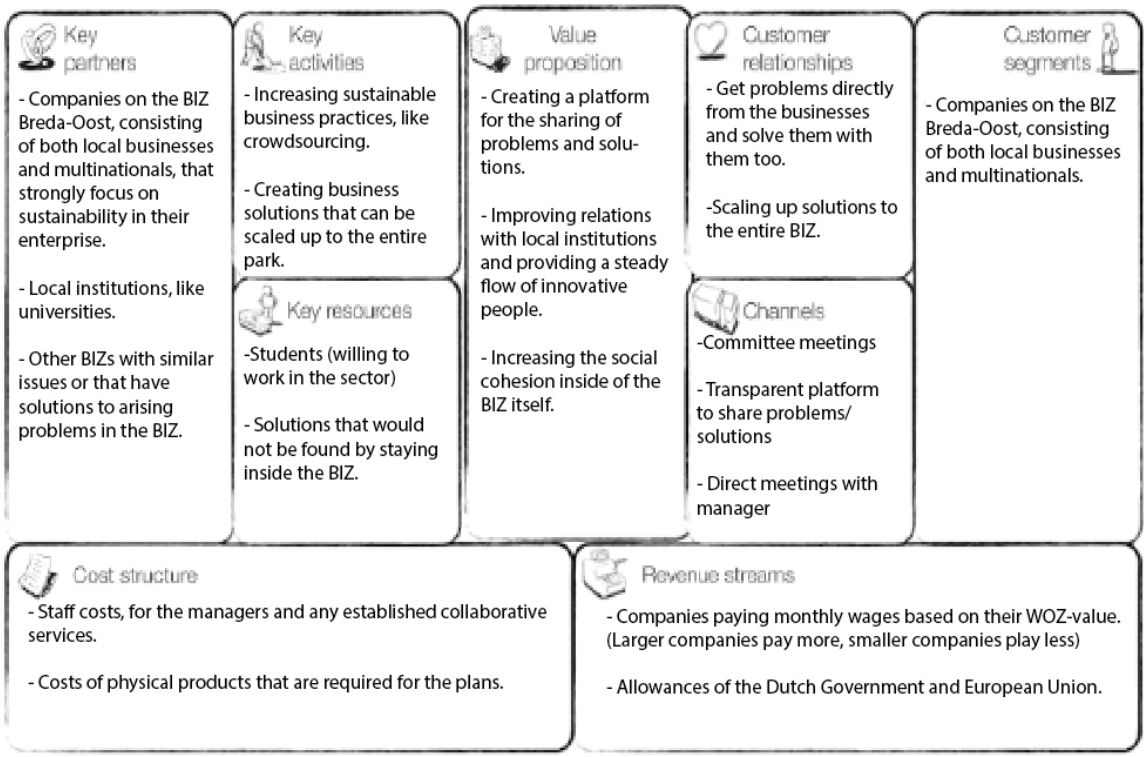


Ecosystem pie model

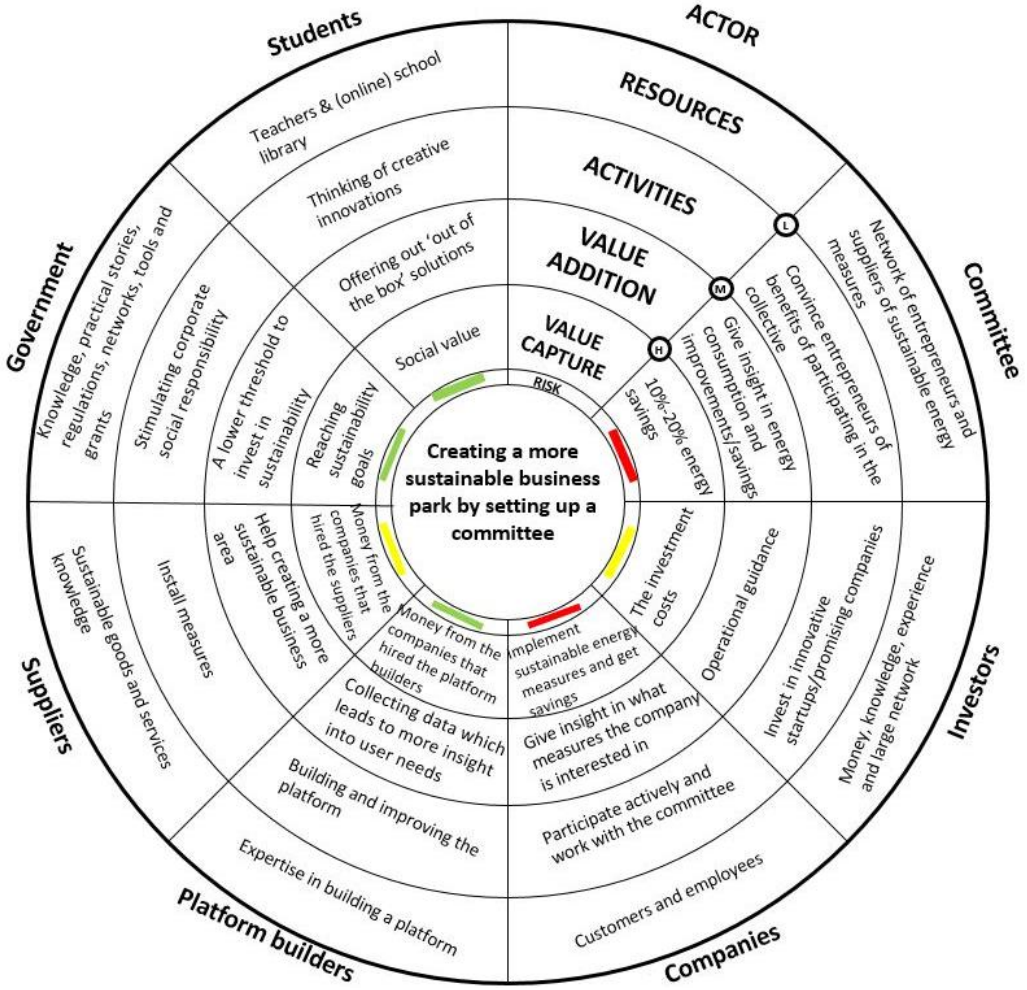
Local connection and knowledge sharing

Business Model Canvas

Revised 3B-O Business Model (Committee/Scale-up Solutions)

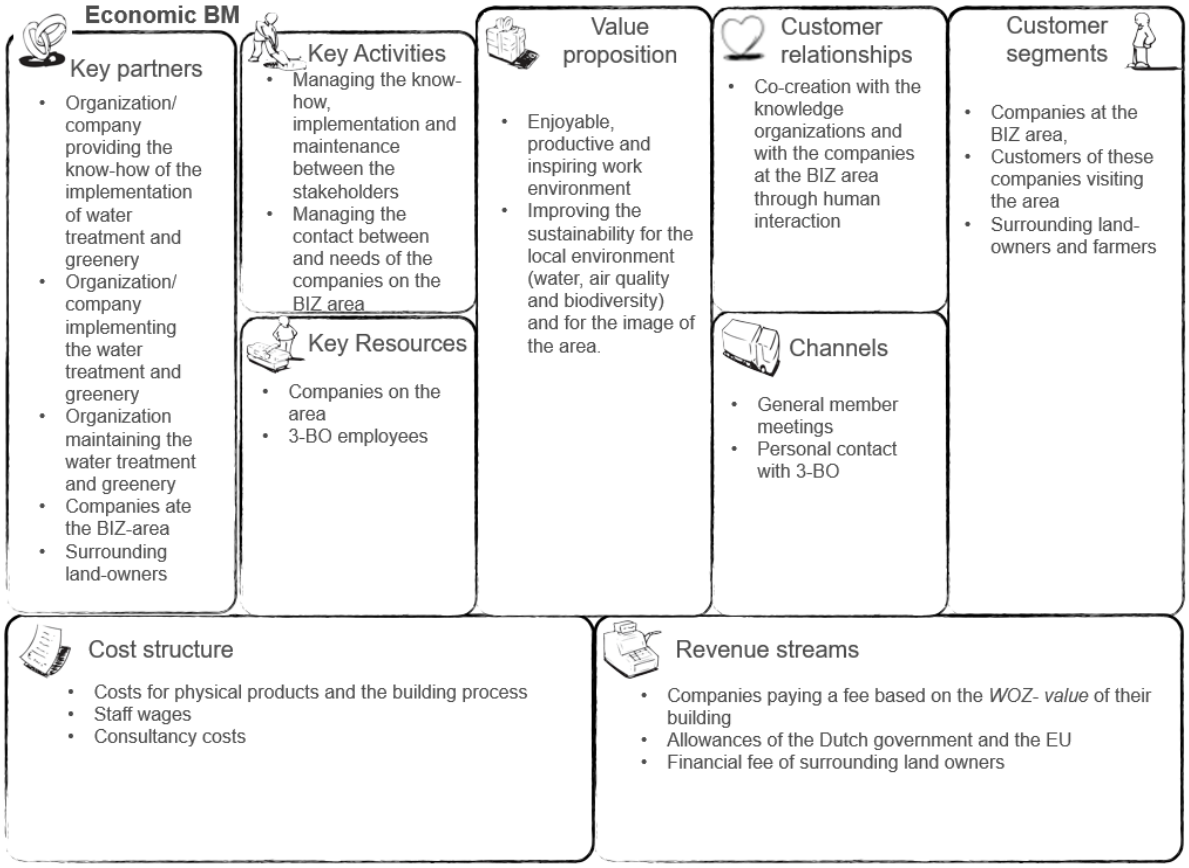


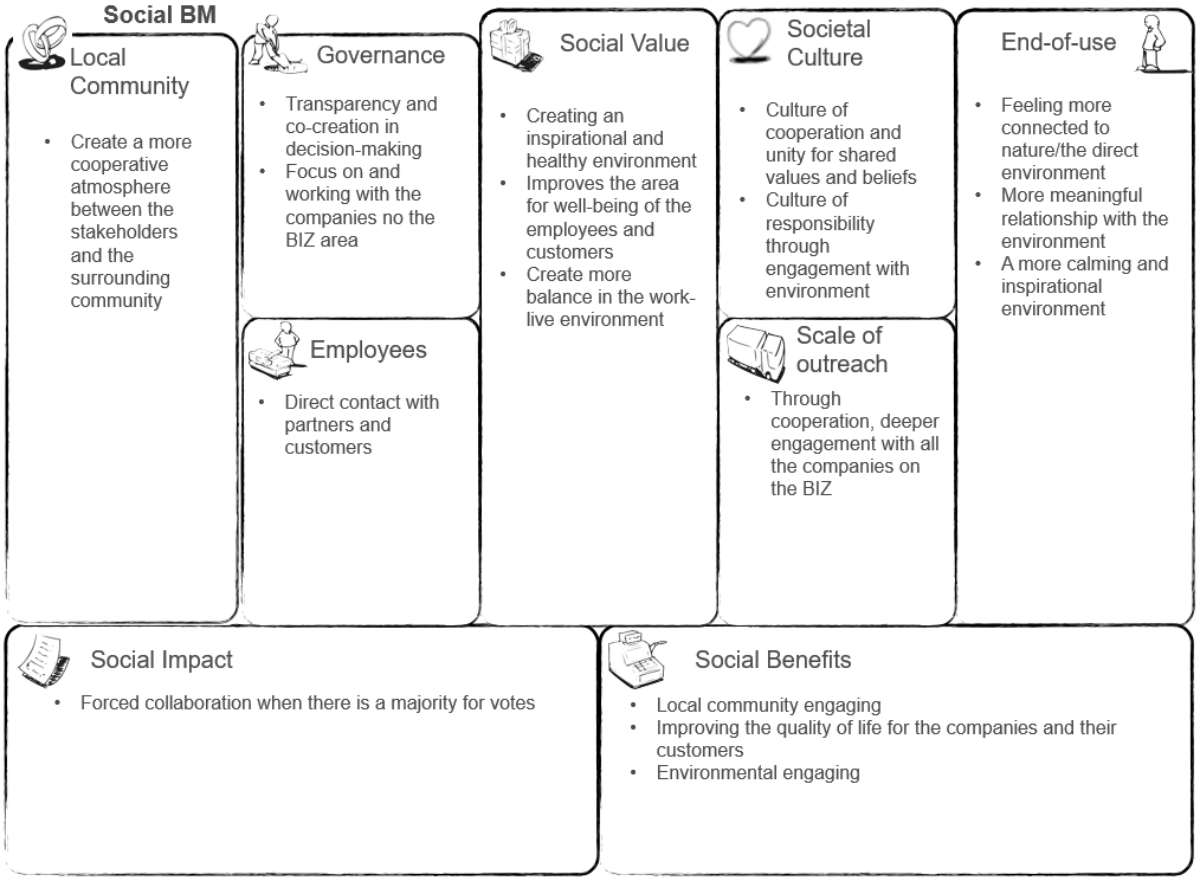
Ecosystem Pie Model

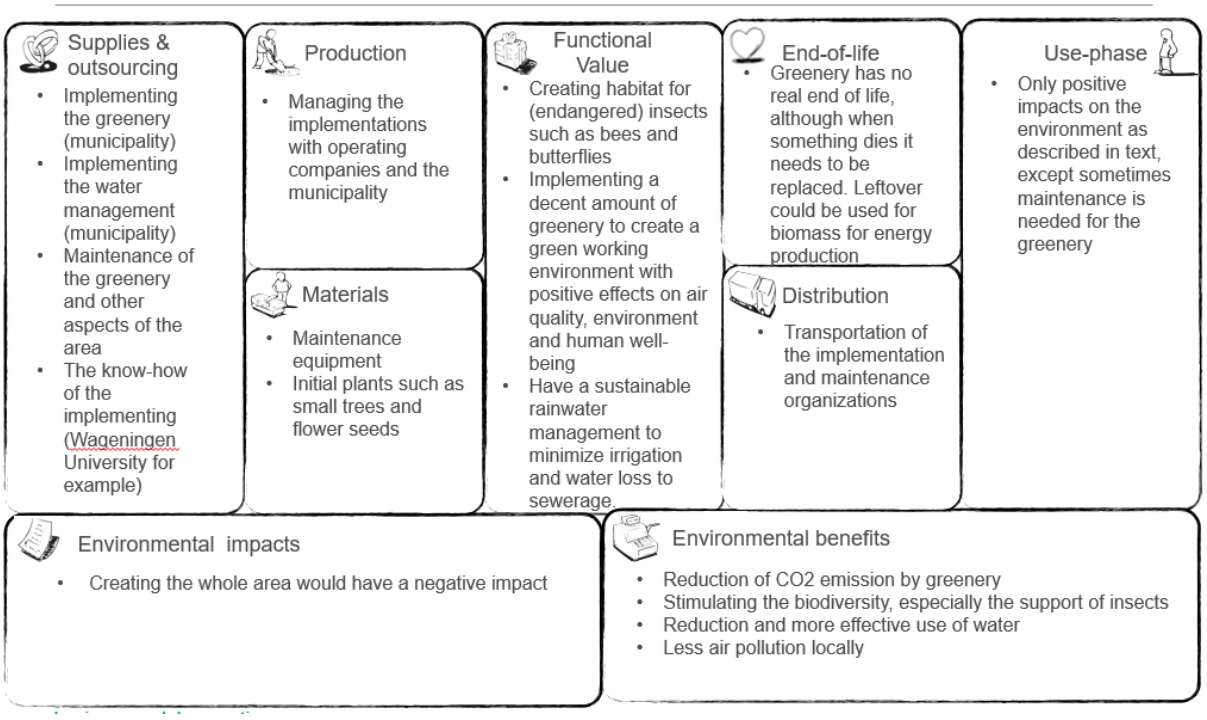


Ecologically sustainable area

Triple-layer Business Model Canvas







Business Model Connect

Same kind of model as the original Business model connect model

Ecosystem Pie Model

Additional research of the effect of a green environment on human health

Below, some of the arguments for the listed themes (Urban Forestry/Urban Greening Research, n.d.) are stated, focussed on the benefit of green spaces on the human well-being

- The experience of nature helps to restore the mind from the mental fatigue of work or studies, contributing to improved work performance and satisfaction (Kaplan, S. 1995, Kaplan, R. 1993, Lohr, V.I 1996., Shibata, S. 2002.)
- A study found 7% higher rental rates for commercial offices having high quality landscapes. (Laverne, R.J. 2003)
- Shoppers indicate that they will travel a greater distance and a longer time to visit a district having high-quality trees and spend more time there once they arrive. (Wolf, K.L. 2005)
- The World Health Organization identifies stress and low physical activity as two of the leading contributors to premature death in developed nations. (World Health Organization. 2006, 2008) The cumulative effect of chronic, low-grade stresses can have a greater impact on health and well-being than acute or extreme events that occur at infrequent intervals. Humans are able to manage moderate and high-stress levels for a short period of time.

Chronic stress, with little opportunity for recovery, can lead to unhealthy levels of psychological and physiological reaction (McGonagle, K.A., 1990, Lepore, S.J., 1997) Exposure to nearby nature can effectively reduce stress (Ulrich, R.S. 1986., Kaplan, R., 1989), particularly if initial stress levels are high (Ulrich, R.S., 1981) Simply having a view of nature produces recovery benefits. Individuals experience a greater degree of restorative experience and lower stress levels with greater duration and frequency of visits to green spaces (Korpela, K.M., 2008)

- Place attachment and meaning are the person-to-place bonds that evolve through emotional connection, meaning, and understandings of a specific place and/or features of a place (Shumaker, S.A. 1983). The attachment and meaning of a green place can encourage individuals to actively protect and engage in pro-environmental behaviour (Vaske, J.J. 2001).

G. Appendices of 5. C. Validation

Interview business students

Start - Uitleg opdracht: Duurzaam verdienmodel: meer generiek, geen financieel overzicht maar meer een concept

Zij: Duurzaamheid Opdracht > Afvalstromen van de bedrijven op het terrein. In kaart brengen van de stromen en dan een afvalbeleid te maken. Wat is de productie van het jaarlijkse afval en in welke categorie hoort dat?

Contact met de bedrijven is er minder, wij vooral 3 business modellen gemaakt en die verder uitgewerkt. Weten jullie wat het nu is? BIZ belasting en salaris vanuit EU subsidie.

Reactie: Wel een goed idee, tastbaar iets om te vergelijken met consumenten
Veel bedrijven weten er zelf ook nog niet echt veel en dit geeft wel inzicht
In de opstartfase kan de bekendheid van de lijst een probleem zijn.

Omgevingswet?
Voor ecologische model, kan het wel interessant zijn omdat de gemeente de omgeving/groenbeheer doet
In de toekomst komt er waarschijnlijk wel wetgeving voor energie en afval, als je het nu doet loop je voor > Uitzoeken welke wetten op duurzaamheid eraan komen.

Het afval zou je misschien hier ook in verwerken?

Revenue streams: economisch, gemeenten besparen over het budget wat wordt uitgedeeld, budget wordt lager, dus minder subsidies vanuit de gemeentes dus de bedrijven zelf moeten meer gaan betalen. 3B-O wordt meer afhankelijk van de leden, dus pitches worden meer gefocust op de bedrijven om binnen te halen in plaats van gemeente.
WOZ waarde is wel goed,

Afval in kaart brengen per branche, en echt quantificeren.
In kaart brengen van de afvalstromen maar interviewen blijft vrij lastig

Jeppe wilde meer weten wat circulaire economie inhoudt en hoe de afvalstromen zich daarin begeven.

Zijn jullie bezig met verminderen of goede verwerking van afval?
Vooral verwerking van afval, hoe doen bedrijven dat nu? Collectief afval ophalen of iets in die richting, misschien ook goedkoper.
Afvalscheiding kan ook interessant zijn om naar te kijken.

De waarde van de monitoring zit er meer in de imago kant

Wat is het hoofdonderwerp van duurzaamheid?
Voor hem was het energie en co2 uitstoot. En toen de vraag hoe wij het breder kunnen trekken

De noodzaak om te veranderen lijkt er nu nog niet aanwezig, probeer dat meer naar voren te laten komen. Er komt nu wel meer druk vanuit de overheid om duurzamer te worden.

Interview Jeppe Koertshuis, 02-04-2020

Opbouw van het verslag is goed, structuur is goed de opbouw naar de conclusie is goed.

Monitoring is een logische keuze, en wat sowieso mee ga nemen is de voortrekkers groep.
Waarom en hoe ga je monitoren?
Het zal vooral een ranglijst zijn, die zou bekend moeten zijn. Lijst opstellen
Lijst opstellen zal een bijkomstigheid zijn, het verslag zal ongetwijfeld goed komen, waar hij nog meer geïnteresseerd in is, eerst eens allemaal te analyseren wat er gebeurd. De energiemaatschappij is bezig met toegang te krijgen tot energie gegevens, met geanonimiseerde gegevens richting de bedrijven om inzicht te geven. In combinatie met een voortrekkers groep is ook goed.
Wedstrijdje van maken en inzicht geven. Hij heeft het gevoel dat iedereen maar wat doet en wat roept, zonnepanelen op niet geschikte dagen, business case is niet goed uitgezocht.
Monitoring kun je klein beginnen , door deze ideeën is hij getriggerd om wat te doen.
Ecologisch duurzaam bedrijventerrein is moeilijk te visualiseren voor hem .

Bronvermelding erbij bij het onderzoek, is echt fijn voor een betrouwbaar onderzoek.

Bij ons had hij het idee wanneer gaan jullie beginnen? Maar later bleek het allemaal goed te gaan en in een keer een voorsprong. Hij is echt blij met de inspiratie

De laatste friction puntje leek vrij nutteloos,

Eerst beginnen met monitoring om later conclusies te trekken om mensen niet af te schrikken. Dan kun je nauwelijks tegen op monitoring. Als er toch bedrijven tegen zijn, als je dan maar een meerderheid voor de BIZ dan kun je het verplicht stellen. Jeppe blijft ervan overtuigd dat je wel dwars kan blijven liggen. Er was een man op een ander bedrijventerrein die tegen de BIZ een spandoek op ging hangen, de BIZ kwam er, je kan maar beter mee doen, en toen was hij vrij actief. De man was tegen omdat hij geen aandacht kreeg voor zijn plannen. Op een gegeven moment gaan mensen toch wel mee omdat de situatie toch leefbaar moet blijven en je dan de waarde er in kan van gaan zien.

Nu monitoren we alleen energie, welke andere onderwerpen?
Energie, smart cities, beveiliging. Je kan motoring koppelen aan die drie dingen. Bewegingen vast stellen kan met veiligheid en met duurzaamheid te maken hebben (beacons en zo).
En verder met afval en CO2?
Er komt onderzoek voor circulaire economie. Al zou het niet in de BIZ kunnen dan gaan we het toch met een kleinere groep doen. BIZ is vanuit iedereen de hele groep, de andere kant op kan ook.
Monitoring, zal toch een beetje geld kosten. Niet enorm veel en er is nog wat geld over vanuit de vorige BIZ. Energie maatschappij biedt het op individueel niveau al aan. Als je het systeem van de energie maatschappij iets uitbreid dan heb je een mooi systeem.

PDF rapport wil je graag, vervolgstappen klinken positief, misschien publicatie of presentatie.
Je kunt in 4 weken niet alles opnieuw uitvinden, je kan wel iemand

Validation, stap voor stap is het goed om te benoemen.