



Sustainability: An Interdisciplinary Approach

Sustainability at a social enterprise for customised work

Participatory Action Research Paper

Group 5

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Who are we? Why did we choose this course?

We are a group of students of the Vrije Universiteit Brussel, who study vastly different educational programs: varying from economics and law, to biology and computer science. We have one thing in common: we are all interested in how we could make different aspects of our society more sustainable. An important contemporary question in our modern society that should not be underestimated, nor undermined. Thus, by choosing this course, we're trying to learn how to contribute to a more durable way of living, that everyone, especially subsequent generations, can benefit from.

Who is AMAB?

AMAB is a social enterprise, formerly called a sheltered workshop, whose main activities are located in Brussels. They employ people with certain disabilities, who need varying degrees of supervision and support while doing their jobs. In short, they offer opportunities to people who'd otherwise have a difficult time finding employment.

AMAB collaborates with other companies, and offers services like the packaging of items, printing of labels, cleaning and storage of reusable cups, on-site work, gardening, electronics assembly etc.

To accomplish this, they use a hands-on, personal approach regarding their employees: they gauge to which extent each and every employee needs supervision and/or support, so they can flourish fully within the company and their working environment. The benefits of this approach aren't limited to the workplace; it's also an incentive to general personal growth.

All of the above contributes to AMAB being a sustainable enterprise: they strive to develop a balance between people, profit and planet. This not only means they follow the environmental legislation to the grain, but also, whilst stimulating their personal growth, making their employees environmentally aware. They continuously formulate initiatives to reduce their employees' and the companies' ecological footprint and strive for the most ecological cooperation possible with other companies.

What is also worth mentioning is that they were the first company with an automated, industrial 'washing street' for reusable cups in Europe!

What is their affiliation with Colruyt?

Colruyt shops are well known for their low prices. This is partly due to the many package deals they offer to the consumer. Unfortunately, individual items have to be packed again to become a bigger and cheaper package deal. Most of the time in plastic, even when there was already a layer of plastic present on an individual item.

This is where AMAB comes into play: it is these social enterprises that compile the individual items into package deals (co-packaging), after which they are distributed among Colruyt shops around the country. It's one of AMAB's biggest activities, which takes up to 60% of their workers capacity.

Research problem and topic

As mentioned earlier, AMAB has different activities going on, but the one we decided to focus on with our research is their package deal with Colruyt. This re-packaging of products in another layer of plastic isn't a sustainable step in the production process. It even goes against AMAB's principle to be as environmentally friendly as possible.

This is where we come into play: how can this be changed into a more environmentally friendly process, whilst still being profitable? How can AMAB's sustainable way of thinking be applied? This leads to our research question(s) below.

The issue with this activity in the current environmental crisis is that there is a war against plastic and its use. We need to find a way to make our participation in this activity more sustainable. Finding alternatives can create solutions to the polluting issues. Where can AMAB invest to have the same opportunities, if not better ones? Which alternatives exist and how can AMAB promote them to Colruyt? By looking at these interrogations, we can formulate our research question(s).

Relation with the SDGs

We found it interesting to relate our study case with the Sustainable Development Goals of the United Nations Global Agenda for 2030, to analyse with which global goals is linked the work that AMAB is based on and the changes they could incorporate. We observed that there was a relationship mainly with the following SDGs: 8 -decent work and economic growth-, 10 -reduced inequalities-, and 12 -responsible consumption and production.

Firstly, SDGs 8 and 10 are related to reducing inequalities and promoting decent work and AMAB is a social enterprise that gives work to people with disabilities. Specifically target 10.2 addresses the promotion of universal social, economic and political inclusion, which has a lot to do with AMAB's social and economic work with the inclusion of all people without discrimination at their social enterprise. As for the promotion of environmental sustainability AMAB's work is especially related to the next SDGs targets: 12.4 -responsible management of chemicals and waste-, 12.5 -substantially reduce waste generation- , and 12.6-encourage companies to adopt practices and sustainability reporting.

What is our research question?

How can AMAB find (new) opportunities regarding the actual trend towards less packaging/less plastic which impacts the majority of their activity?

What is the trajectory of Colruyt regarding that trend? How can AMAB be the link for Colruyt towards their goal?

Can we find a more sustainable, cost-efficient way to package our clients' (Colruyt) package deals? What are sustainable alternatives for plastic? If there are any, which material fits the criteria (sustainable and the least polluting, while still remaining efficient and practical) the best? Are these alternatives still as profitable for Colruyt? If not, can Colruyt compensate otherwise for this lack of profitability and how can AMAB help them to do so?

Methodology and Action

Our goal was to find an alternative to the current activity and/or better practice of AMAB in collaboration with Colruyt, and to ensure that AMAB's activities get in line with their vision of People, Planet and Profit. We analyzed Colruyt's vision for the future of packaging and their strategy towards less plastic, and looked at already existing practices in the same field to get inspired. We studied AMAB's existing infrastructure and tried to find the existing and potential assets that can be used in this collaboration.

To replace the current plastic wrapping, we needed to find reusable, biodegradable, compostable, or recyclable materials that suit the needs of Colruyt and AMAB while taking sustainable challenges into account. First, we researched available sustainable alternatives to the current packaging materials. With said research, we requested feedback from Lars Dedobbeleer (the Process, Innovation & Planet Manager, and our contact at AMAB) about our chosen alternatives. Keeping this feedback in mind, we organised an interview with Mathias Mees (AMAB's occupational therapist) to be aware of the workforce's limitations. We gathered around a virtual table with AMAB to pitch our selected packaging alternatives and to discuss the price and feasibility of the alternative packaging materials.

After pitching our activities and packaging alternatives in a focus group with AMAB, we used their feedback to present a short presentation to (and conduct an interview with) a representative of AMAB. Our goal was to present our research and to check the feasibility of our selection of activities and packaging alternatives with Colruyt themselves. We contacted the "Account Manager - Social Economy" of Colruyt, and the "Sustainability Manager" of Colruyt, but did not get answers to this day.

Using the knowledge that we obtained from the interview, we wrote this report about our findings.

Research of materials

When researching alternative packaging materials, there are a couple of aspects that we have to keep in mind. On an ecological level, materials should have a low impact on the environment. On a social level, however, the material should be manageable by the workforce of AMAB. It is our responsibility to make sure that a suggested alternative has a lower ecological footprint than the current packaging material, whilst not increasing the complexity for the workers of AMAB. We do not want to introduce an unnecessary learning curve because we do not want to increase stress for these workers. Lastly, customers of Colruyt also should be able to see the product they are buying, so the material should be transparent or should leave parts of the products exposed.

The ecological and social aspects of the materials are crucial, but the economic costs of the alternative material matter as well. The cost of the alternative should be as low as possible for both Colruyt and AMAB. The main factors that have an impact on this aspect are the cost of the material itself (combined with the amount of material necessary per package), the upfront costs and maintenance costs of machinery to handle the material. The labour and skill needed to use this alternative also have an impact on the price: bundling fewer products in a given amount of time increases the costs per bundle.

LDPE

LDPE is the first material we researched. Low density polyethylene (LDPE) is a variant of polyethylene plastic, which is one of the most used plastics today. The low density of LDPE makes it more flexible and is therefore ideal for plastic film applications and easy to use for the workforce at AMAB. Another positive factor is the price, it is one of the cheapest produced plastics. Although LDPE is a great alternative for AMAB's current material, it is neither a bio-plastic, nor biodegradable.

On the bright side, it is easy to recycle LDPE since there are already recycling programs all over the world. Since it became obvious there was a need for a more sustainable option, we decided not to continue our research on this kind of plastic.

Cellophane

Cellophane is a biodegradable plastic, used in all kinds of different applications. It is plant-based, compostable, and seems to have a lot of different benefits on the ecological level. Cellophane itself should be eco-friendlier than foil and is biodegradable.

Cellophane is transparent, so products wrapped in cellophane would be visible, just like with the foil that AMAB uses now. There would be barely any change for the customers of Colruyt themselves. We did not manage to determine if cellophane machines would be usable by the workforce of AMAB, but we ruled out cellophane as an alternative because of other factors.

Multiple sources claim that the production of cellophane itself is not that "green" because of the chemicals used to treat the material. Another downside of the material is the economic costs: cellophane itself is more expensive than foil, and the cellophane machines that AMAB would need to wrap the products can be costly as well. Because of these reasons, we did not proceed with researching cellophane in-depth.

PLA

Another material we researched was PLA. PLA stands for Polylactic acid which can be produced from vegetables like sugarcane or corn, therefore it is a bio-based plastic. On top of that it is also biodegradable.

PLA is transparent and has a high melting point which therefore meets the requirements of shrinking wrap used by AMAB. As mentioned with previous material, we did not manage to determine if PLA machines can be used by the workforce.

A downside of the biodegradable characteristics of PLA is that it requires a whole list of conditions to break down. For example, a temperature of over 140 degrees and high humidity is needed, which is only available in industrial composting facilities. If we do not manage to get the PLA to the facility, it will simply not degrade.

For these reasons we do not recommend using PLA as a sustainable alternative for the current materials used at AMAB.

Banding (with Bandall)

Banding is the process of bundling products together using a paper or plastic band. Bandall is a Dutch company that provides these banding systems. They claim that they can provide a highly efficient and cost-effective banding process. Bandall can provide lots of different eco-friendly banding materials for co-packing. If we use bands for the co-packing of products, we also use less packaging material because the band does not take up the full width of the products. Compared to foil, shrink wrap, and similar alternatives, this would save costs on the used material for the same amount of products.

We can band products together with transparent plastic, but we can also use biodegradable banding materials like eco-friendly paper. This material is not see-through, but (a part of) the product is still visible, which is one of the constraints for Colruyt. We can argue that this type of co-packing would be even more attractive for the customer because there would be direct contact between the customer and the product, instead of only seeing the product through foil.

AMAB themselves did a case study on Bandall, and they concluded that their use of plastic would drastically decrease when using banding for co-packing. Because of this, the increase in costs would be almost negligible. Their internal study claims that they would use 70% less plastic, which would mean that they would decrease their use of plastic with over 26 tons per year! On a social level, the same internal study of AMAB claims that their workers can work with the machines of Bandall if they provide training to their workers. There is no steep learning curve which means that they will reach the same productivity after this training period. There will be no negative impact on their workers.

Overall, Bandall seems like a great alternative to the foil and shrink wrap that AMAB uses now. This alternative covers the needs of all stakeholders: using less (and more sustainable) material is eco-friendlier, workers of AMAB and customers of Colruyt will not suffer from the new material, and the increase in costs are negligible for both AMAB and Colruyt.

Meetings with AMAB

First interview

During our first meeting with AMAB, we tried to gauge the capacity of their workforce and infrastructure, whilst also inquiring on their research on sustainable packaging alternatives on plastic, and possible obstacles.

We learned about the most common limitations of AMAB's employees, which are mental disorders (like autism), social issues (a vulnerable home situation, by example) and physical disorders.

We were informed that it's not easy for a non-profit to tackle sustainability issues, because they are dependent on the profit organisations to be able to make investments in diverse technologies. At the same time they need to keep up with their social aspect, which is a requirement imposed by the government. A company on the regular circuit searches for people that can do the job, while AMAB, as a 'social company', looks for jobs for people with a disorder. This distinguishes AMAB from other companies.

Furthermore, we asked AMAB about their studies on sustainable packaging materials. We learned that some research and testing was done, like on the use of Bandall. But progress is still difficult to implement, since the pricing of sustainable alternatives is still high. If a more sustainable way of packaging is more expensive (like bioplastics), the cost of the handling should be lowered to achieve a similar overall price. This would be difficult for AMAB, since their handling price is already low. Also, if a material is more difficult to handle for the employees, it can cause a higher handling cost (education, time, effort), which would have an adverse effect on the pricing.

So currently, it's still the cheapest to package in regular plastic. Considering that, AMAB researched and implemented the use of a thinner plastic (10 μm instead of 35 μm), which already reduced the amount of plastic used drastically.

In addition, there were brief market researches by AMAB on several alternatives (ELA, LDP, bioplastics), but no further floor tests on these.

Another floor test where products were flow-packed with paper instead of plastic, wasn't a success. In the future, when paper will be able to be made thinner and more flexible, this will surely be a possibility.

The washing of reusable containers is an eligible option to test in AMAB's facilities, since there's already a washing machine for cups present on the premises. It would be an incremental step towards a more circular and more sustainable economy.

Bulk packaging, the best sustainable alternative, is not an option because the packaging is Colruyt's factor price. They can make a lot more profit if they use multipacks. The choice to use this method would also reduce a lot of work opportunities for AMAB.

The use of alternative materials is also difficult to carry out for Colruyt because of the dependency on other entities like Procter & Gamble and their marketing team. For *Boni*, the house brand of Colruyt, a cooperation solely between AMAB and Colruyt on researching alternative packaging methods is possible: there's no external influence present. So at the moment, AMAB's focus lies on finding and suggesting sustainable alternatives for *Boni* products.

To conclude: little by little, new technologies and improvements are making sustainable alternatives on plastic a lot more affordable than a few years ago. It's becoming a viable option to cost-efficiently use them in the future. Later, it would be a possibility for AMAB to select certain groups of products with easier handling to start the process with, so the cost of handling doesn't rise exponentially. Afterwards, it could be expanded to multiple product lines.

Second interview

During our second interview with AMAB, we wanted to inquire about their future plans for sustainable packaging alternatives, their relationship with Colruyt and our research.

First, we tried to gauge AMAB's future agenda on the topic of sustainable alternatives.

AMAB's current focus is to uniform their packaging across all departments. Although the uniform packaging option is LDPE, it supports the next step AMAB wants to take, to find a sustainable alternative.

So far AMAB has applied for a subsidy for their research and plans on the topic of a circular economy. While also planning workshops with Switcher, an agency that helps companies to get more in contact with circular opportunities, where they'll conduct an opportunity analysis for AMAB.

In addition, AMAB would also consider carrying the additional costs of using a sustainable packaging alternative, but it will mostly depend on the varying costs, on how much the price would rise.

They also have done further research on the washing of reusable containers as a potential opportunity for AMAB proposed during our first interview. Most of the time, they prefer to work with Belgian companies because it's easier for partnerships and getting in contact with them. Nevertheless, they will be on the lookout for similar opportunities with startups in Belgium.

Next, we delved deeper into their relationship with Colruyt and how they see their future relationship evolving.

AMAB has built a strong and good relationship with Colruyt. They expect to be a front-runner for Colruyt's sustainable test cases and future endeavors. This is also AMAB's main goal, to be an active partner and participant in Colruyt's future projects on sustainability. They are also dependent on Colruyt, as they provide daily work for 400 of their employees.

While getting in contact with the right people at Colruyt can be difficult at times, if provided with good practical cases and information, they are a valuable source of feedback.

Finally, we inquired what AMAB was planning to do with our research.

Our research is mostly in the interest of the opportunity analysis AMAB will conduct next year with Switcher. Therefore, the main point of interest of AMAB is our proposed packaging alternatives and point of view on their viability and practical use. These alternatives can also be used as a way to interact with Colruyt on the topic of sustainability.

Conclusion: Hardships

There are different reasons why finding alternative and more sustainable ways to package orders can be a challenge for AMAB. AMAB is a social enterprise which means their social aspect is of great importance. As a company they're the ones that find work for their employees and not the other way around. Finding more sustainable ways to package might bring new tasks and activities along with them. This is why AMAB needs to find a way to take into account the limitations of the employees for these new activities. Their workers have special needs and precise abilities that lead to mostly repetitive and simple tasks.

Of all of the alternatives that we discussed in this research they all have a different environmental impact. They all have a wide range of physical properties meaning we need to reduce our spectrum of possibilities to find the best ones suiting AMAB's packing activities. When it comes to the actual change, we know that systemic change is hard to implement quickly because there are many different stakeholders in the production and retail chain. In this case AMAB has to keep track with Colruyt and their expectations too. While incremental

change might be quicker it might not be able to deliver the best environmental impact and provide the bigger alternatives.

Conclusion: Grey areas and remaining questions

During our research we were very fortunate with the contact we had with AMAB. They were very easy-going and open to discuss the different options while sharing their own thoughts and projects. Still we remain with some questions that would require some further research and time. How will the future of packaging be and will AMAB be able to shift their activities in that same direction? How would the customers react to that (possible) change? All of these interrogations still remain unsolved.

Epilogue

We were pleasantly surprised to learn that both AMAB and Colruyt already did some extensive research on how to become more sustainable enterprises. By doing that, they are contributing to using our planets' resources in a more respectful manner. But there's still room for improvement, which we hope that our research and teamwork did contribute to.

We'd like to give special thanks to Lars Dedobbeleer, our main contact within AMAB, who was always prepared to help us find the answers to our questions, and gave feedback where needed. We'd also like to thank Mathias Mees, who gave us insights in the workers' profiles, and provided us with useful footage.

For us, working together as a team was a very pleasant experience. Even in these troubling times of lockdowns and limited social contacts, there were never any problems with communication. We were well attuned to each other, and every team member fulfilled their task to the very best of their abilities.

Due to this assignment, we learned more about social enterprises as a whole, and about their take on sustainability. We got new insights on the hardships associated with sustainability and the war against plastic, and learned about the alternatives and methods that can be used to reduce the amount of plastic waste. Overall, a very educational experience.

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