



DigiEduHack Solution
Lisbon - Hack The Food System
Challenge: Lisbon - Hack The Food
System Challenge 2020

MoveWASTE

Making food waste prevention part of everyone's daily life

MoveWASTE is a digital, game-changing solution for food waste management and industrial repurposing.

Team: Waste Patrol

Team members

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Members roles and background

We are a group of researchers from the Associated Laboratory for Green Chemistry of the Portuguese Network of Chemistry and Technology (REQUIMTE) and of the University of Porto.

Our background ranges from Biomedical Sciences, Sustainable Chemistry, Analytical Chemistry, Nutrition and Bromatology.

Visit www.foodphenolab.com for more information.

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Solution Details

Solution description

Our growing concern with the sustainability of our planet made us recognize the impact of food waste as an urgent problem needing immediate action. To address this challenge, we conceived *MoveWASTE*, a digital platform intended to provide **on-demand service** to users through **scheduling** and selective **collection** of **value-added food residues**, within municipalities. Conceptually, *MoveWASTE* is meant to be a user-friendly, transacting and interactive platform - with some elements of gamification - with the objective of bringing together and aware both industry, food-related services and consumers to reduce and upcycle food waste. Additionally, the *MoveWASTE app* will be made available **simple** and **creative leftover recipes** that will help users to save time, money, and to eat healthy. The only requirement: have a smartphone!

Overall, *MoveWASTE* is committed to:

- **Engage** people to eat sustainably by making them rethink about the way they eat food, serve it, and dispose of it, in an inclusive, inspiring and accessible manner;
- **Connect** consumers, businesses and nonprofits that transform food with industries that repurpose food residues into new marketable products and valuable resources such as fertilizers, energy and a bunch of innovative products, from pharmaceuticals to building materials;
- **Support** the reuse, recycling and reprocessing of food wastes through research and development. These will be openly shared on *MoveWASTE* to accelerate the learning and creation of knowledge.

Though MoveWASTE can't tackle the entire problem, upcycling food waste can definitely make a difference! And we all have an important role to play!

Solution context

In a world where nearly **820 million** people go hungry, how can we continue to lose or waste one-third of all the food that is produced globally?

In the EU alone, it is estimated that almost **90 million tons of food** suitable for human consumption are **lost or wasted every year**. Households are responsible for more than half of that amount, the equivalent to 47 million tons of food. Upsettingly, this level of inefficiency is transversal to a range of other sectors, including food manufacturing, food retail, hospitality and food service, which, most of the times, are not aware - or do not believe - that there is a solid business case for avoiding, reducing, recycling or upcycling food waste (not to mention number of strategic, yet nonfinancial motivators, that lie on environmental sustainability issues, food security, brand recognition, and a sense of ethical responsibility).

Food waste - including all food intended for human consumption that never reaches us, as well as edible food that consumers throw away - not only comes with a significant cost to farmers, food manufacturers, restaurants, public authorities and consumers but also incurs in a loss of natural resources and considerable environmental impacts. For instance, in landfills, food waste is responsible for approximately **8% of our total greenhouse gas emissions**, a measure that directly compares the global warming potential of pollutants.

Well, we just can't afford for that to go on! This societal challenge has to be tackled, otherwise it will compromise the future and sustainability of next generations. And this is what *MoveWASTE* is all about: to **inform, educate, engage, and change people's lives** by teaching them how to reduce, manage and get their organic food waste valued at the domestic and industrial level.

Solution target group

The *MoveWASTE* platform will cater to the whole spectrum of food waste management opportunities, from small commercial establishments, restaurants, hospital and school canteens, supermarkets, up to municipal sized operations. ***MoveWASTE will be responsible for the pick-up and delivery of food wastes to its industrial processing partners*** (agro-food, cosmetic, textile and biofuel & bioplastic industries).

Solution impact

Environmental & Economical Impact:

- *MoveWASTE* will be a reference for two of the 3R's environmental concerns: *reducing* (consumers will have access to cooking recipes and in-house application tips to include their food "waste") and *reusing* (residues from restaurants and canteens will be diverted to industries as high-value raw materials);
- *MoveWASTE* will offer society the possibility of diverting food wastes from landfills, thus preventing unnecessary emissions and pressures on natural resources that have been used to produce it;
- Incorporate tax benefits to promote and support private & public investment in the waste management sector, its innovation, development, sustainable growth and job creation.

Social & Educational impact:

- Provide knowledge transfer between users on how to reduce and upcycle food waste at the domestic and industrial level;
- Allow users to keep track on the transformation pipeline and industrial applications given to their food residues;
- Provide official stamps of quality to marketed products coming from its industrial partners, as a gesture of recognition for them being environmentally-friendly;
- Engage users on its daily practices, product developments and sense of ethical responsibility towards sustainable practices.

Solution tweet text

Let's make something more of our waste with MOVEWASTE! #don'tbetrashy #moveyourwaste #loveyourmother #notmeanjustgreen

Solution innovativeness

The portfolio of general waste management platforms is wide. However, the scenario is the opposite when we narrow down to food waste. The few available apps are mainly focused on rescuing' the over-produced or unsold food by restaurants, cafes, and grocery stores at low-cost prices or appealing discounts. Other examples, include apps used to develop internal processes to reduce and prevent food waste in restaurants kitchens; or to help users to manage their grocery storage. While these apps are meaningful in combating the food waste, undeniably food waste will eventually appear. So, **the quest to use as much, or all, food waste in a fruitful manner continues to rise up significantly**. This was the driving-force to *MoveWASTE* platform, a completely **new** and **game-changing platform**. *MoveWASTE* appears to **fill the environmental service gap between food, waste production and new valuable products**. First, it questions users' if food portions usually wasted are really waste! Or they can be consumed using other cooking practices (e.g. banana peel bacon) or have other in-house uses (e.g. organic cleaners)? Then, if not, it provides a connecting platform between users and industry to drive-through collect and transfer their food waste into added-value material.

In 2018, 125 million dollars were raised by companies fighting food waste. Now, additionally, *MoveWASTE* powerful solution can **create new business opportunities and income from food waste**. Its simplicity is so ingenious. Is one of the most creative and useful advances in food waste management. Users are able to reduce, handle, haul and upcycle food waste all-in one app while standing in their house, while they are actively educated and engaged. Users do not have to search for food waste specific disposing recycling bins spread in different locations: one-click and the solution will be at the front door. Users will be actively educated engaged. A simple change in our daily routine by using *MoveWASTE*, can make a meaningful change and **cut our carbon footprint**.

Solution transferability

MoveWASTE solution has a high transferability rate in several contexts. Since the solution proposed by *MoveWASTE* is a common trans-European need, *MoveWASTE* is **transferable between countries**, implying only small adjustments to each country economic and society realities. Having in mind the EU policies and (governmental) goals for the Food System for the next years, the features of this solution immediately make sense to all the intended users. Beyond intuitive appeal, *MoveWASTE* solution is created based on characteristics that **inspire** others to adopt them, either because of their appealing novelty or **creative approach** to **tackling a worldwide** well recognized common **problem**.

While *MoveWASTE* solution has specific target users as defined previously, at long-term, it is also transferable to include other entities, namely **R&D facilities** as well as **universities**. The easy and centralized access to food waste can **empower the research** on developing **new added-value applications** to this waste.

Finally, *MoveWASTE* solution is also transferable to food-related and non-related items that are usually wasted in a wrong way and constitute a source of environmental pollution. For instance, most consumers dispose cooking oils in their sinks which has a high impact on blockage of sewage system and water and land pollution. But cooking oils are also an added-value item because they can be directly used to biodiesel production! So, *MoveWASTE* solution could, additionally to food waste collection and transfer, provide a similar solution to this item. The motto is the same: Moving and converting waste into safe high-added-value new products.

MoveWASTE can be used also in the fashion and textile context. Fashion system is also turning built on an eco-efficient concept based on the “*Cradle to Cradle*” manifesto.

Solution sustainability

MoveWASTE will promote a **fine-tuned collaboration** between **consumers, municipalities, food-related businesses** and **waste-processing industries**. At short-term, municipalities will assist the whole process of concept dissemination, collection and waste handling within local communities. Through this, municipalities will be relieved from economic and logistical problems associated to the treatment and disposal of food residues. In exchange, **users will have access to exclusive discounts on their municipal waste tax fee.**

Food waste has many different industrial potentialities. These will be explored and converted into marketable products/resources, which industries could then sell and get profit. Beside this economic income, the *MoveWASTE* partners will be awarded with a *Waste Friendly* stamp to advertise consumers about their commitment towards a more **sustainable** and better **world**.

Solution team work

We are a group of scientists with background on food science and expertise in plant-based products and by-products. Over the years, we have been involved in several national and international projects which allowed us to collect a number of multidisciplinary scientific and social skills, valuable tools for a project like this. More recently, we have been involved in projects in close collaboration with food industry focusing on how to turn industrial by-products into economical resources with added value. This close relationship made us believe that our knowledge is a valuable tool! We are ready to think up together on new ideas and turning them into new solutions to overcome society challenges. Our expertise, hard-work capacity, and creative thinking qualities allied to a high motivation, are key ingredients for teamwork and *MoveWASTE* success.