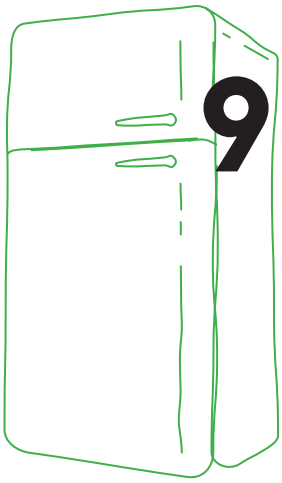

Domestic appliance leasing - functionality

Description of the business

Context

While not all products sold as domestic appliances are strictly essential, we use a large number of these appliances every day, giving the sector a degree of stability (see the "market" section below). More than financial trends, the evolution of the sector in recent decades has defined by a decrease in quality, and a growth in internet sales of equipment of this type. We will not dwell on the second aspect, which is a strong trend in many sectors, and has no direct impact on this project (which will, without a doubt, have an online presence, even if this simply introduces the concept and products).

However, planned obsolescence has strongly affected the sector in recent years, dramatically reducing the quality of appliances: with an ever-decreasing lifespan and falling prices (due largely to overseas production), the quality of domestic appliances has not improved. Meanwhile, the price of repair has not fallen, as it is carried out locally and is therefore based on Belgian wage costs (including social security), which, with the best will in the world, cannot fall below €25 to €30 per hour. And with appliance designs including a vast number of plastic pins and electronic components glued into place for the quickest possible assembly, repairs take time: it often takes an hour just to open up an appliance without damaging its casing. As a result, less and less appliances are repaired, instead being disposed of and replaced.

But all of this is about to change, as from 2021, in the European Union, manufacturers will be required to provide spare parts for a fixed period, depending on the type of appliance:

- A minimum of 7 years for refrigeration equipment (10 years for door seals)
- A minimum of 10 years for domestic washing machines
- A minimum of 10 years for domestic dishwashers (7 years for certain parts)

For the duration of this period, manufacturers must ensure spare parts are delivered within 15 working days. It must be possible to replace spare parts using commonly available tools, without irreparable damage to the appliance. Manufacturers must also make information on repair and maintenance available to professional repair people. Initially, this will only apply to large domestic appliances (or "white goods"), and providing spare parts does not mean that the appliance has been designed for easy repair. However, it is a step towards a significant behavioural change.

Industrial activity

Certain recent industrial initiatives have acted before these requirements come into force, bringing quality, local manufacture up to date. The Kippit electric kettle and the "L'increvable" (unbreakable) washing machine are both "made to last", and have strong environmental and social values.

Kippit is working on a second product, a washing machine, which the company plans to offer on the rental market, also known as the "functional economy". This is nothing new in the sector, as several companies have already tested a similar approach which aims, through its business model, to reassure consumers that the product is going to last (as the manufacturer/hire company covers the costs of repair or replacement). Services of this nature exist in Germany (Grover), the Netherlands (Bundles), and France (semeubler.com or the Boulanger group), as well as Belgium, where Bosch has been working with CPAS (Public Social Assistance Centres) in Flanders to supply white goods.

So, why not bring back local, high-quality production, designed to last, offering a leasing service if the demand exists among customers in Brussels? Consider targeting one or two key appliances before potentially expanding the range.

And investigate the type of model trialled by Bosch, by primarily targeting shared housing, cohousing, or social housing, where many people live in close proximity and these items will be in constant use, proving that it is worth shouldering higher production costs in exchange for an increased rate of usage.

In addition to this, the project could promote a reflection on the consumables and consumption of the appliances designed (see. market section). You could even take this line of reasoning to its extreme, by offering appliances that function on human force alone, without electrical power. However, this would severely limit the range, as it seems unlikely at this stage that consumers would be prepared to sacrifice convenience (e.g. for a washtub or manual food processor).

The business activity would involve the following key steps:

- Choose the first item to produce, while planning a follow-up range based on the same sourcing and manufacturing criteria or processes;
- Identify the principal materials/components, and find local suppliers;
- Estimate the cost price and, on this basis, position your product in terms of RRP;
- Assess demand, opportunities within the functional economy in "housing networks" (i.e. the examples cited above), where the product could be shared by several neighbouring households, who would split the cost;
- Identify the main retail distribution channel;
- Having done all of this, it will be time to produce detailed designs for the first item.

But what to choose? It should be something we use regularly, that is not already covered by other initiatives. For white goods, the dishwasher. For small appliances, the coffee machine or toaster. Or even the iron. The last two items are also frequently seen at Repair Cafés, so they are definitely worth considering.

Technical feasibility

There are no technical issues per se. The majority of items that could be manufactured locally and responsibly in this way have existed for years and developed over time, though this evolution has been driven more by cost than by durability.

Therefore, we must focus on the basic mechanical principles by which these appliances operate and re-conceptualise "cost", in terms of the "Total Cost of Ownership" over 20 to 30 years. Similarly, we must filter out the innovations made over the decades that have not actually improved the product, often involving the addition of excessive electronics. As the idea is to move away from "electronic gadgets", instead producing a long-lasting, easily-repairable item, it is best not to incorporate these into the design, as they are the cause of many faults.

The problem is not one of feasibility, but rather ingenuity and careful consideration of every aspect, first and foremost considering the most common causes of faults.

First Elements to be analysed by the project team

- Conduct an in-depth analysis of the sector to understand the financial challenges that objects of this type pose. In this regard, it would be useful to understand why Kippit chose to focus on a kettle. The aim is to identify an object for which the "Total Cost" approach offers end users value for money, and which will be easy to market.
- Visualise the model and source materials, subcontractors and expertise locally.
- Test the pricing model
- Produce a hand-built prototype of the object.

Sources of inspiration

- Kippit: https://www.kippit.fr/pourquoi-kippit/
- L'Increvable: https://www.lincrevable.com/fr/
- Grover: https://www.grover.com/de-en
- Bundles: https://bundles.nl/en/washing-machine-rental/
- Semeubler.com: https://www.semeubler.com/5-location-electromenager
- Boulanger: https://location.boulanger.com/location-petit-electromenager.html
- Projet Papillon from Bosch: https://www.bosch.com/stories/papillon-project/

Business potential

Market

It is hard to find accurate figures for Belgium, but French figures are more readily available. In early 2020, the French Association of Household Appliance Manufacturers (GIFAM) published a summary of the year 2019: "Overall, the domestic appliances market generated 8.8 billion euros in 2019 (60% from large appliances, 40% from small appliances), with around 70 million appliances sold, 54.2 million small and 15.6 million large. ". Using a basic ratio between populations, we can estimate that turnover in Brussels would be over 100 million euros, with close to a million individual appliances sold.

In addition to the brand-new market, there is also a market for second hand appliances. According to Recupel, 788,279 domestic appliances were sold second hand in Belgium in 2015. "Half of these were brought to the second hand market by social enterprise reuse centres Ressources and Komosie. These centres, specialising in the repair of white goods offer both large (27,255) and small (294,714) appliances, which are sold at around a third of their original price with a one year warranty. "

In parallel to new and second hand retail sales, the success of Repair Cafés proves that a growing number of consumers are eager to shift towards a new model. As "professional" repairs are often financially unviable, these voluntary initiatives are overwhelmed with demand. There is, without question, a market for a well-considered and fairly-priced long term appliance care solution, and over time, it could win over a large section of the population.

Another recent market trend to bear in mind: Belgium is one of the top three European countries in terms of the purchase of energy-efficient appliances. According to a study carried out in 2013 by the firm GfK (a marketing institute specialising in mass retail), Belgian consumers are the third most likely to consider energy efficiency when purchasing domestic appliances. Thinking about the planet? Perhaps, but the purse strings also come into it. It is no coincidence that the top three are known for high energy prices. While at the bottom of the pack, the opposite is true.

Competition

There are no similar local initiatives in Belgium, but as the distribution networks for domestic appliances are well-established and organised, any "innovations" should be able to find their way onto the European market with relative ease. However, brands that intend to play on their local and responsible credentials will not do so. Large companies are also innovating, and this is the real source of competition, as these groups are not going to sit around and watch small initiatives flourish. As we have already seen, Bosch is trialling new approaches, and the SEB group is including a growing number of appliances in its "10 year repairable guarantee", under which spare parts and plans will be available.

Circular nature of the business

The functional economy is part of the circular economy as it prioritises repairability and, consequently, the objects leased are designed to maximise their lifespan. Of course, it is possible to take this further by using materials that are, themselves, "circular", from the outset, in other words either recycled or organic (sustainably produced) materials.

Key figures

Assumptions

It is very difficult to acquire figures on the cost price of white goods. The average retail price of a washing machine or dishwasher is around €700, with prices ranging from €350 to €1800.

Of course, low-end models are not comparable to quality machines. For example, €380 over a lifespan of 5 years = approx. €40/year. While €1200 over 30 years, is also approx €40/year. Therefore, we can say that the average depreciation on a large domestic appliance for the end customer is around €40/year.

Below, we have attempted to provide a breakdown of the manufacturing and distribution costs of a washing machine:

Retail Price Inc. VAT	750	
Sale price ex VAT	620	
Distributor margin	186	
Manufacturer sale price	434	30%
Manufacturer margin	52	12%
Wages	121	28%
OPEX	130	30%
CAPEX	30	7%
Raw materials	100	23%

By doing so, we can give a rough estimate of the cost of raw materials and the budget allocated to wages.

We found that by working with a distribution network, the cost of assembling a machine and preparing it for shipping cannot exceed €120, or approximately 4 hours' work for a qualified engineer. The materials used to make the machine should cost no more than €100 to purchase.

Of course, these figures can easily increase, in the case of direct delivery of a part, including fitting.

Retail Price Inc. VAT	750	
Sale price ex VAT	620	
Distribution costs	50	
Manufacturer sale price	570	30%
Manufacturer margin	114	20%
Wages	121	21%
OPEX	130	23%
CAPEX	30	5%
Raw materials	100	18%
Extra amount	74	13%

This leaves €130 euros, which can be reinvested in parts or labour. With 1 production team of 5 workers, taking 4 hours to assemble each machine, it would be possible to produce 1760 machines per year, giving a turnover of around €1M.

These figures are yet to be tested on the ground, and both the assembly time and the proportion of the sale price that goes to the distributor appear too low in this calculation.

Ideally, the economic model should include retail sale (at a competitive mid-to-high-end price point), generating a profit in the short term, and breakdown insurance and support, guaranteeing the optimal performance of the machine, replacement of faulty parts and return to service within 24 or 48 hours etc.

At first glance, leasing also appears possible, but the fee would have to be around €100/year per machine to recoup the costs in under 6 years, turn a profit in the 7th year, and generate an attractive profit in the years that follow. The table below offers a simulation, which you may find useful

This table shows that you would have to wait 8 years before making an annual profit, and 13 years before recouping past operating losses. In this scenario, the business must be capable of absorbing cumulative operating losses of around 2.5 million, which would require solid financial backing.

This table does not take into account the increasing cost of parts and labour required to repair machines over time.

Having considered these two options, retail sale combined with a no-hassle breakdown guarantee seems to be the most realistic option in the short term, particularly given that the insurance could be a paid service after the 1st year of use.

Repairs cost around €45 to €60 in engineer callout fees, excluding spare parts. Based on the assumption that a conventional appliance breaks down around twice every 6 years, and parts cost around €50 to €80, breakdown insurance could be calculated as 2 x 50 + €100 in spare parts = €200/6 years = €33/year or €0.35/wash.

Estimated TCO of a large domestic appliance

A washing machine consumes 0.5 to 1.5 kWh and around 40 to 60 l of water per cycle.

Assuming that it performs 120 cycles per year, 120 kWh and 6000 l of water are used + detergents.

In Belgium, electricity costs around €0.25 kWh, including tax, or €40 in electricity and €3.5/m3 x 6 = €21 in water.

Detergent costs around €0.30 per cycle, or an additional €36.

Therefore, the total operating cost of the machine is:

- €40 for depreciation
- €40 for electricity
- €21 for water
- €36 for cleaning agents

This gives an annual total of €137, or €1.14 wash.

Therefore, over 30 years, the total cost is 137 x 30 = €4,110, including €1,200 in machine costs excluding repairs. The total cost of repairs is 33 x 30 = €990, almost equivalent to the cost of the machine!

This gives rise to the idea of ‘selling’ a machine with support and repairs covered (including spare parts), knowing that the price of parts is set by the manufacturer and they can be sold to the end customer at a high price.

Made in Brussels

Local procurement

It is worth considering incorporating salvaged materials into the design of the object (even if this will definitely be a challenge due to varying designs), working in partnership with recycling and second hand firms, which are not always able to resell their white goods under guarantee.

There are also a growing number of companies and initiatives working to salvage materials, in addition to the conventional waste disposal services (Bruxelles Propreté, Veolia, Suez, etc.), who you should contact once you have chosen an appliance and determined your precise material needs.

Local partners

Partners

- In terms of design, it would be useful to speak to Repair Cafés such as iFixit, and social enterprises (Komosie, Ressources).
- Speaking to manufactures who have taken a similar approach, such as Kippit andL'increvable is a useful way of exchanging practical ideas, and you may even be able to mutualise production of certain components.
- Companies producing long life products, such as French firm Longtime, can also help you in your research. You should also contact other sustainable manufacturers committed to discuss these topics, and to find out more about existing sustainably designed products.

Suppliers

- See the section on sources of raw materials above
- It is worth noting that L'increvable suspended its project in February 2020 as they could not find an industrial partner to manufacture their machines. So there is valuable expertise to be gained from these stalwarts! But also a risk of difficulty finding a suitable manufacturer. However, the quality of the Belgian manufacturing sector should enable you to resolve this issue.

Distributors

- Direct selling appears to be the easiest option initially, and makes sense in terms of the functional economy (leasing).
- Various local sustainable and/or innovative shops could provide the first points of sale during the trial phase, but it will, without doubt, be necessary to use the more "conventional" distribution channels in future.
- Assess the potential of "niches" such as social housing and student accommodation, shared housing, new builds with shared common areas (such as kitchens and laundry rooms).

Subcontractors

To be identified based on the specific design of the object.

Competitors

Potentially all domestic appliance brands, but few appear inclined to move in this direction in the next few years, though there is a chance that some may wish to buy/distribute successful initiatives.

Location

Initially, at the research stage, all that is needed is a few offices with an adjoining workshop or garage space for initial prototypes. To test the object in real-life conditions, a member of the team can simply take it home.

Key factors for success

Operational and commercial barriers

From an operational point of view, there should not be any real barriers, other than cost price, and the time required to research and fine-tune the project.

From a commercial point of view, as mentioned above, the entry of the major companies into the "sustainable" or "responsible" appliance market could present a challenge, especially if it occurs before the project launches. But this does not appear likely. What is more, Boulanger launched its functional economy scheme some time ago, and it does not seem to have revolutionised the market, so there is certainly still space for new initiatives.

Intellectual property

Before and after the design of the object, it will be necessary to carry out a patent check on the mechanisms used and their components.

Legislative obstacles

The rules on CE marking must be respected.

If the device contains electrical components, the business will be subject to WEEE legislation (see links). This is not complicated, but should be included in the manuals and packaging, and on the product labels. Similarly, other European legislation such as the Packaging Directive, or Conflict Minerals Regulation (in electronics), should be assessed on a case-by-case basis.

If you make any significant discoveries when designing the object, it would be wise to protect them legally (to protect you from potential competitors), by means of patents or trademarks.

Other risks

It is wise to consider potential future problems, especially if you intend to offer a leasing service, which is the equivalent of a lifetime warranty. Thorough tests and conservative estimates are called for.

Project team skills

The team will require "conventional" entrepreneurial skills, with one person responsible for management and finance, one possessing good sales and negotiating skills (including negotiating partnerships), and one capable of organising the production process.

However, the project will inevitably be best led by the inventor/designer of the object, who has a vision of the project. This may be one of the three people above, or a fourth. He or she is not necessarily a technical expert, as it is possible to have a very clear vision of the "performance" you want from an object and its appearance, without necessarily producing it yourself.

What the RBC (Brussels-Capital Region) can do make it a success

Calculation of the environmental and climate impact, and recognition of "sustainable/circular" labels

References and links

Article from RTBF	La durée de vie de vos électroménagers va s'allonger: les fabricants doivent s'adapter d'ici 2021 : https://www.rtbf.be/info/societe/detail_la-duree-de-vie-de-vos-electromenagers-va-s-allonger-les-fabricants-doivent-s-adapter-d-ici-2021?id=10335873
Boulanger rentals	https://location.boulanger.com/location-petit-electromenager.html
Bosch (Papillon project)	
Bundles	https://bundles.nl/en/washing-machine-rental/
Grover	https://www.grover.com/de-en
Kippit	https://www.kippit.fr/pourquoi-kippit/
L'increvable	https://www.lincrevable.com/fr/
Label Longtime	https://longtimelabel.com/
WEEE legislation	https://www.health.belgium.be/fr/deee-dechets-dequipements-electriques-et-electroniques
Packing and packaging directive	https://ec.europa.eu/environment/waste/packaging/index_en.htm
Repair Together	https://www.repairtogether.be/ qui liste lui-même les autres réseaux de réparation, mais surtout de nombreuses ressources en lien avec la durabilité des objets : guide de réparation, listes de pièces détachées, schémas…
Seb and repairability	https://www.seb.fr/produits-reparables
Semeubler.com	https://www.semeubler.com/5-location-electromenager